MAPS

PROVINCIAL GAZETTEERS OF INDIA

BURMA

VOLUME I

Burma.—The name given to the country stretching along the western edge of that portion of the continent of Asia which lies between the Bay of Bengal and the China Sea and is known generally as Indo-China. It is situated between 9° 58′ and 27° 20′ N. and between 92° 11′ and 101° 9′ E., covering a superficial area of approximately 237,000 square miles, of which 169,000 are under direct British administration, while 68,000 belong to dependent Native States. Due north the boundary between Burma, Tibet, and China has not been precisely determined. Assam, Manipur, the Lushai Hills, and the Chittagong Hill Tracts hem it in on the north-west, and its western border is the Bay of Bengal. Its north-eastern and eastern frontiers march with the Chinese Province of Yünnan, the Chinese-Shan and the Lao States, the French possessions in Indo-China, and the kingdom of Siam; and on the south it is bounded by that portion of Siam which forms part of the Malay Peninsula. It thus constitutes the easternmost rampart of the Indian Empire. Its extreme width is approximately 500 miles and its extreme length about 1,200 miles; in other words, its northernmost and southernmost points, the first near the head-waters of the Irrawaddy in the neighbourhood of Tibet, the second on the Isthmus of Kra on the Siamese Malay border, are about as far removed from each other as is Allahābād from Cape Comorin or Lahore from Chittagong. With the exception of the three southern Districts of Tenasserim—Amherst, Tavoy, and Mergui—Burma (with the Shan States) forms a fairly compact lozenge-shaped quadrilateral area, with its southern and northern angles at Cape Negrais and Hkamti Long, and its western and eastern corners at Maungdaw on the Naaf river in Arakan and in the bend of the Mekong river which takes in the eastern corner of the Shan State of Kengtung. The Districts of

Dimensions and boundaries.

Amherst, Tavoy, and Mergui form a straggling southern adjunct to the rest of the Province, connecting it with the Malay Peninsula. In the second edition of the *Imperial Gazetteer* the shape of British Burma, as it figured on the map in 1885, was likened to a 'sea-gull travelling towards the east with wide, extended wings,' the northern pinion being Arakan, the southern Tenasserim, and the body including the valley of the Irrawaddy and Sittang. Matters have so progressed since then that the country would now more properly be compared by the imaginative to a kite, with its head pointed due north and a string or tail depending from its south-eastward end.

Origin of name.

The origin of the word 'Burma' is by no means certain. It is argued, on the one hand, that the name came from India in the shape of 'Brahmā'; on the other, that it is a corruption of the Chinese name for the Burmese race. The former was the view held by Sir Arthur Phayre; and, when it is borne in mind that in the works of European writers of the seventeenth and eighteenth centuries the country is occasionally referred to as 'Brāma,' there would certainly appear to be prima facie grounds for the theory. At no time, however, has Brāhmanism found a footing in more than an insignificant portion of what is now Burma; and, on the whole, the weight of opinion appears to lean towards the second hypothesis, which was originated by the late Bishop Bigandet, the scholarly Vicar Apostolic of Southern Burma. 'Mien' is the Chinese for Burma[1], and the Burmese name for Burma was and is still written Myanmā, though ordinarily pronounced Bamā. The Shans called Burma the country of the Mans, the term 'Man' having been originally applied by the Chinese to a group of tribes, including the Lolo and the Mantzu, who are found in considerable numbers in the Province of Ssuch'uan. The Manipurīs on the north-west frontier of the Province call the Burmans 'Maran.' Burmans in Kachin and Maru are styled 'Myeng'; and among the Palaungs, a Mon-Anam pre-Burman hill tribe inhabiting the north of the Shan States, who are absolutely free from the suspicion of exposure to Hindu influences, Burma is known as 'Bran.' In short, internal evidence all points to a Mongolian derivation.

Natural divisions.

Burma is split up into natural divisions by its rivers and mountain ranges. The valleys of the Irrawaddy, Chindwin, and Sittang form a narrow strip of plain land, running down the centre of the main mass and widening out into the delta country on either side of Rangoon. The sea forms the

[1] Cf. Marco Polo's 'Kingdom of Mien' and 'Province of Amien.'

southern limit of this strip. On all other sides the central level is enclosed by hill ridges, in the north by the Kachin, in the west by the Chin, in the east by the Shan and Karen Hills; and, as the general direction of streams and ranges alike is north and south, a geographical dissection results in the presentation to the observer of a series of more or less vertical stretches of territory following the line of the coast. Prior to 1852 British dominion was represented by the provinces of Arakan and Tenasserim, two narrow fringes of the seaboard of Indo-China. The Burmese War of 1852 filled up the gap between the extreme ends of these two strips, and added to British territory the southern portions of the main central section of Burma, lying along the valley of the Irrawaddy, and of the long stretch of highland rising between the Irrawaddy and the Salween. Thirty-four years later, with the annexation of Upper Burma, these accretions were again extended to the north. The whole of the valley of the Irrawaddy, with its tributary the Chindwin, now forms an integral part of the Indian Empire, and the table-land between the Irrawaddy and the Salween acknowledges British suzerainty as far north as the confines of Yünnan. At the same time control was acquired over the Chin Hills, an oblong strip of hill country in the north-west, forming part of the general mass of upland of which the Yoma ('main ridge') separating Arakan from the Irrawaddy valley is the most southerly spur. To the east of the Salween there is a further stretch of country bounded on its east by the Mekong. A large portion of this area belongs to the Shan States and forms part of the Indian Empire. Its precise limits are as yet undetermined; and the hold over its northern end, peopled by the most backward of all the wild communities that inhabit the Province, the Was, is at present of the lightest.

With reference to rainfall and population, Burma falls into four main natural divisions: the Upper Burma wet, the Upper Burma dry, the Lower Burma littoral and deltaic, and the Lower Burma sub-deltaic. The Upper Burma wet division, with a rainfall of over 50 inches, comprises the Shan States, the Chin Hills, and the Districts of Kathā, Bhamo, Myitkyinā, the Upper Chindwin, and the Ruby Mines, i.e. portions of the Mandalay and Sagaing Commissionerships. This mass of hill country is the home of the Shans of the Shan States, the Shans of Burma proper, the Kachins, the Chins, and a host of other hill tribes, and may be said, roughly speaking, to comprise the whole of the non-Burman areas of Upper Burma.

The Upper Burma dry division is an arid zone which extends across the valley of the Irrawaddy from the 20th to the 23rd parallel of latitude, and consists of plain land with a few sporadic hill masses dotted over its surface. It embraces the Districts of Minbu, Magwe, Pakokku, Mandalay, Shwebo, Sagaing, Lower Chindwin, Kyaukse, Meiktila, Yamethin, and Myingyan—i. e. portions of the Mandalay, Sagaing, and Minbu Commissionerships, and the whole of Meiktila—being more or less conterminous with the limits of the old kingdom of Ava. Most of the old Burmese capitals, Pagan, Sagaing, Ava, Shwebo, Amarapura, and Mandalay, are situated within its limits, and the preponderating element of its population is still Burmese. The rainfall is slight, save at its fringes.

The wet division of Lower Burma stretches down the entire length of the coast, and includes the whole of the Arakan and parts of the Tenasserim, Pegu, and Irrawaddy Commissionerships. North and south of the delta country hill ranges approach the sea-face, islands abound, and such lowlanders as there are have found a footing only in the valleys and exiguous stretches of plain land that occur here and there along the seaboard. Pure Burmans are comparatively scarce in this area. Arakanese, Bengalis, and Chins form a large proportion in the Arakan portion, while to the south the Karens, Taungthus, Talaings, Siamese, Salons, and Tavoyans make up a considerable section of the community. The rainfall is ordinarily far in excess of 100 inches per annum. The Districts of Akyab, Sandoway, Kyaukpyu, Amherst, Thaton, Tavoy, and Mergui belong to this division, as also the Hill Tracts of Northern Arakan and Salween.

In the delta proper, i. e. in the Districts of Bassein, Pyapon, Myaungmya, Maubin, Hanthawaddy, and Pegu, the country is practically all a dead level. Such rising ground as is found at its limits is of inconsiderable height. The population is relatively dense, and the rainfall not so heavy as along the coast hills, seldom rising above 100 inches per annum. With the delta Districts are intimately connected five comparatively dry Districts, belonging to the Commissionerships of Minbu, Pegu, Irrawaddy, and Tenasserim, which, for want of a better classification, have been designated the sub-deltaic Districts of Lower Burma. They mark the border-land between the wet and the dry areas, and partake to a certain extent of the characteristics of both. Thayetmyo is almost a dry zone District; Henzada is practically deltaic; Tharrawaddy, Prome, and Toungoo have features of their own. All, however, have

a rainfall of below 90 inches; all are in Lower Burma; none actually touches the coast; and on the whole all possess enough similarity with each other, and differ sufficiently from their neighbours, to justify their being placed together in one category. In the delta and in the sub-deltaic Districts the Burmese element again asserts itself, though there is a far greater admixture of Karens, Talaings, and other non-Burman Indo-Chinese races than in the Districts of the arid zone.

Within its borders Burma can show scenery of surprising variety. In the remote uplands of the extreme north the piled hill masses raise their heads almost into the region of eternal snow, their blue crests encompassing the head-waters of the great streams that they dismiss southwards to the ocean; and from end to end of the Province there are but few spots from which one or other of the long forest-clad spurs that stretch downwards towards the southern seas cannot be seen closing in the prospect on the one hand or the other. They are visible alike from the silk bazar in Mandalay and from the roadstead of Moulmein; the traveller skirts them for half a day in his train journey from Rangoon to the north; they follow the seafarer down the coast from Akyab to Maliwun. Their flanks are clothed with dense bamboo or tree jungle. Here and there, amid the more sombre green, a vivid patch points to the handiwork of the thriftless *taungya*-cutter. Down all the countless valleys that furrow the uplands, streams wend their way plainwards, marking their passage through the forest by a sinuous streak of richer verdure; and where the line is broken by waving plantain tufts, there, one may be sure, thatched roofs will proclaim a village, with possibly its monastery embowered amid the trees, and a whitewashed pagoda or two. Low-lying stretches of swampy land covered with grey-green *kaing* grass abound in the valleys and hollows of the hills, and point to the countless acres of waste still capable of being brought under cultivation. These stretches open out towards the plains, and are swallowed up in the wide paddy-fields that follow the line of all the principal watercourses of the Province. This is the typical scenery of the north of Upper Burma. Farther south in the dry zone the aspect of things is in marked contrast. Luxuriant vegetation no longer meets the eye. On every hand the country rolls away in stretches of a dull yellow ochre. Sparse, stunted vegetation clothes the arid ridges. Through the hollows toddy palms are scattered, and almost every eminence is crowned with a pagoda spire. In place of narrow forest paths, encroached on by undergrowth and blocked by

Scenery.

fallen trees, we have here stony cart-tracks radiating unimpeded across the face of the country, rising and falling with its undulations, leading through hedges of cactus, past bleak collections of huts that lie huddled away within ring fences of thorn bushes and are barely distinguishable during the dry season from their drab surroundings. From Thayetmyo southwards conditions outwardly more pleasing prevail. The scenery of the north is reproduced, though on a somewhat less imposing scale. Green jungle-clad heights look down upon the stream, and smiling tracts of rice land tell of a generous rainfall. South of Prome the hills fall back from the river; elephant grass and paddy-fields spread like a sea on either hand; the horizon is bounded by the nearest clump of trees that rises appreciably above the level of the fields, and the breaking up of the waters into a network of muddy tidal creeks proclaims that the delta has been reached and that the sea is near. A southward course takes the traveller out to sea; but long after the low coast has dropped behind the horizon, the brown flood through which the vessel ploughs tells of the vast volume of silt that the Irrawaddy has carried down with it through the Lower Burma plains. In time, however, clear water and fresh prospects are reached. The coast-line that soon lifts into view in the east is fringed with hills clad with tropical vegetation down to the beach's edge. Amid their hollows nestle sandy coves; and, as the course towards the equator is maintained, wooded islands rise up into view out of the blue sea in ever and ever greater numbers, till at length the southern limit of the Province is reached amid the beautiful pearling grounds of the Mergui Archipelago.

Hill systems.

Outside the Districts of the dry zone and the areas around the Irrawaddy delta there is but little level land in Burma. To the extreme north the country is a labyrinth of hills, the habitat of the Kachins and other cognate tribes; and it is from this remote region, or even from the Tibetan plateau still farther north, that all the main hill systems of the Province start. Towards the south the chains diverge and take lines of their own; but so dense is the massing in the angle caused by the converging of the Assam and China frontiers, that the only general classification possible is that which distinguishes the highlands lying to the west from those lying to the east of the Irrawaddy. The former may be considered first. To the north-west of the point in Myitkyinā District where the Malikha (*kha*='stream') and the N'maikha unite their waters and become the Irrawaddy, lies the Hukawng valley, the cradle of the Chindwin river. To the east of this basin the Kumon range

runs down from Hkamti Long towards the neighbourhood of Mogaung; and the main trend of upland is continued southwards, where this system ceases, by a succession of ridges which form the watershed between the Irrawaddy and the Chindwin. The Taungthonlon, an eminence 5,652 feet in height, marks the northernmost point of the most distinctive of these ranges. South of the Hukawng valley is a mass of broken hill country known as the Jade Mines tract, which lies more or less at right angles to the ranges described above, and abuts in the west on the upper reaches of the Chindwin. On the western side of the last-named river, at and below this point, are the Nāgā and Manipur Hills, with peaks running up to a level of over 12,000 feet. This lofty rampart follows the course of the Chindwin southwards, and constitutes the western frontier of Upper Burma. Between the 22nd and 24th parallels of latitude the western highland border is known as the Chin Hills; farther south it is the home of the inhabitants of the Arakan and Pakokku Hill Tracts, while its ever-dwindling southern spur that skirts the Bay of Bengal and ends at Cape Negrais goes by the name of the ARAKAN YOMA. Two of the highest points in this system are Sarameti (12,557 feet), known to the Burmans as Nwemauktaung, a mountain due east of Kohīmā in Assam, a portion of which lies in Burmese territory; and MOUNT VICTORIA (10,400 feet), a peak in the Pakokku Chin Hills between Paletwa and Pakokku, which is looked upon as possessing great possibilities as a sanitarium. Turning now to the hill systems to the east of the Irrawaddy, we find a succession of mountain chains and plateaux separating the valley of that river from the rocky trough down which its sister stream, the Salween, rushes to the sea. Starting from the extreme north, the eastern Kachin Hills detach themselves from the lofty ridge that rises between the head-waters of the two great rivers and, running in a southerly and south-westerly course, are absorbed into the high ground that is massed to the north of the Northern Shan States and the Ruby Mines District. Thence again southwards, as far as the boundary between Upper and Lower Burma, the Shan plateau stretches its undulations across the country that lies between the two main streams of the Province. In the Northern Shan States the grouping of the hills is broken and irregular, but in the Southern the trend of the ridges north and south is pronounced. Near Toungoo, soon after the Shan Hills have given place to the Karen Hills, the high land to the west of the Salween narrows and, under the name of the Paunglaung range, drops

away eventually to the level of the Thaton plain, a little to the east of where the big-mouthed Sittang river empties itself into the Gulf of Martaban. On the farther side of the Salween lie the rugged heights peopled by the Was in the north, and farther south the hills that form the Salween-Mekong watershed in the trans-Salween State of Kengtung. As the confines of the Lao States are reached, a mass of hills curves round the southern edge of Kengtung along the Siam border down the east of Karenni, sending out southern spurs which stretch along the marches of Amherst, Tavoy, and Mergui, in the Tenasserim Division, to the extreme southerly limit of Burma. In addition to the hills on the western and eastern skirts of the Province, a few isolated ranges call for notice. One of these is the PEGU YOMA, which, rising in Yamethin District and running southwards, separates the valleys of the Irrawaddy and the Sittang, and branches out near the head of the Irrawaddy delta into several low terminal hills, the extremity of one being crowned by the Holy of Holies of Burmese Buddhism, the Shwedagon Pagoda of Rangoon. The main central plain of Burma, formed by the Districts of the dry zone, is for the most part destitute of rising ground. Here and there, however, isolated hill clusters rise from the surrounding level; and in the centre of the plain, like a boss on a shield, stands the volcanic peak of POPA, its summit nearly 5,000 feet above the sea.

River system. The Irrawaddy and Chindwin.

The general course of the rivers of Burma, like that of its hill ranges, is from north to south. The IRRAWADDY traverses the greater part of the Province from end to end, dividing Burma proper into two strips of about equal area. Formed by the junction of the Malikha and the N'maikha, about 30 miles above the town of Myitkyinā, it emerges from a labyrinth of hills in the extreme north, and flows for 900 miles through rocky defiles, broad level plains, and narrow tidal creeks, to empty itself through a multiplicity of mouths into the Bay of Bengal between Rangoon and Cape Negrais. Its principal tributaries are the Mogaung stream, the TAPING, the SHWELI, the MYITNGE, the Mu, the CHINDWIN, the Yaw, the Mon, and the Man.

The Salween.

The next most important river of Burma is the SALWEEN or Nam Kong, which, lying to the east of the Irrawaddy, flows, like its sister stream, generally from north to south. So far as is at present known, its springs are situated at about the 32nd or 33rd parallel of latitude in the unexplored country east of Tibet. When it is level with Hkamti Long, i.e. at about the 27th parallel of latitude, only a comparatively narrow watershed

separates its channel from that of the N'maikha. It is not, however, till it has penetrated about three degrees farther south and has reached a point between 600 and 700 miles from its mouth, that it enters British territory. From thence southwards, ploughing between steep hills, it bisects the Shan States and Karenni, skirts the eastern edge of the Province, and disgorges itself into the Gulf of Martaban near Moulmein.

The Sittang. About midway between the valleys of the Irrawaddy and the Salween and flowing, like these streams, from the north to the south, is the SITTANG. The valley lying between the Pegu Yoma and the Shan Hills in Yamethin District is the area within which the head-waters of the Sittang or Paunglaung amalgamate and begin their journey southwards to the sea. Fed by affluents from the Yoma on the one hand and from the Karen Hills on the other, it winds past the towns of Toungoo and Shwegyin and spreads out, almost imperceptibly, after a course of about 350 miles, into the northern apex of the Gulf of Martaban at a point about equidistant from the ports of Rangoon and Moulmein.

Minor streams. Rangoon itself lies at the junction of three minor streams, the Hlaing or RANGOON RIVER, which flows down, followed by the line of the Prome railway, from the north-west, the Pazundaung creek from the north, and the PEGU RIVER from the north-east. Various streams rise in the hills along the coast of Burma, run south, and empty themselves, after a course of greater or less length, into the sea. Of these, the most important are the KALADAN in Arakan, which, rising in the remote fastnesses of the Chin Hills, flows southwards into the Bay of Bengal at Akyab; the Tavoy river, on which the town of Tavoy stands; and the Tenasserim, farther down the coast, in the extreme south of the Division of that name. The Mekong can hardly be said to form any part of the river system of Burma. For a distance of between 50 and 100 miles it does, however, form the boundary between the Shan States and French Indo-China, and therefore deserves mention. Of its affluents the principal one in this region is the Nam Lwi, which traverses the greater part of the Shan State of Kengtung and joins the Mekong from the west.

Lakes. *Jhīls*, or shallow meres, caused by the accumulation of river or rain-water in low-lying levels, and drying up either wholly or partially before the close of the hot season, are common in every District of Burma. The greater part of the fishing industry of the interior and the bulk of the hot-season tillage is carried on in the beds of these natural reservoirs, but their

transitory nature is such as to deprive them of a title to geographical recognition. There are but few considerable stretches of water which attain any depth that have not been largely converted by May into paddy-fields. The INDAWGYI LAKE, in the west of Myitkyinā District, is the largest of the few real lakes in Burma. It measures 16 by 6 miles, and is bounded on the south, east, and west by two low ranges of hills. The Meiktila Lake, near the town of Meiktila, is artificial. The Inle Lake, near Yawnghwe in the Southern Shan States, is nearly as large as the Indawgyi, but has greatly diminished in size within recent times. A similar shrinkage is apparent in the case of some lakes at Möngnai in the Shan States. The Inma in Prome District, the Tu in Henzada, and the Inyegyi in Bassein are the three most conspicuous of the inland waters of Lower Burma.

Islands. Islands are plentiful all down the shores of Burma. The largest is RAMREE, off the coast of Arakan. It is about 50 miles in length and at its broadest point about 20 miles in breadth; and the town of Kyaukpyu, the head-quarters of the District of the same name, lies at its northern end. Separated from it to the south by a narrow strait lies CHEDUBA, another considerable island, with an area of 220 square miles. A straight line drawn from the Alguada lighthouse to the northern end of the Andaman Islands passes through the Cocos, two small islands lying to the north-east of the Andamans and forming, administratively, part of the Hanthawaddy District of Lower Burma. They are not inhabited by any permanent residents, and are only visited occasionally by coco-nut gatherers. The island of BILUGYUN is situated south-west of the town of Moulmein at the mouth of the Salween. It is 190 square miles in extent, and is thickly inhabited. South of Tavoy the MERGUI ARCHIPELAGO stretches along the western face of the Tenasserim Division. The islands of this group are rocky and sparsely populated. Tavoy, King, Sullivan's, Elphinstone, Ross, Kisseraing, and Domel Islands are all of considerable extent, and are all more or less frequented by the Salons or sea-gipsies.

Harbours. The Province boasts of few good natural harbours. With three exceptions (Akyab, Kyaukpyu, and Mergui), the principal ports are situated on tidal rivers at some little distance from the sea, and none of the harbours on the sea-face is exceptionally commodious or easy of approach.

Geology. A line drawn along the western bank of the Irrawaddy as far south as Mandalay, and thence southwards again, along the foot

of the Shan plateau, down the Sittang valley to the head of the Gulf of Martaban, may be said to divide Burma into its two main geological divisions. West of this line the formations are of Tertiary age; east of it they are far older, for the most part Archaean and Secondary, any Tertiary patches being purely local. From a geological point of view the most important mountain ranges to the west are the CHIN HILLS and ARAKAN YOMA, which are composed partly of sandstones, shales, and limestones, probably of Cretaceous age, but for the most part of rocks containing Tertiary fossils extending from the Nummulitic to the Miocene period; and the PEGU YOMA, consisting of shales and sandstones of more recent formation than those of the Arakan Yoma, which overlie, apparently conformably, the Nummulitics on the eastern slopes of the latter range. The oldest-known formations in the western division are the Chin shales found in the central parts of the Arakan Yoma. According to Mr. Theobald (who has given them the name of Axials), they are of Triassic (Secondary) age, but doubt has been thrown upon the correctness of this classification. A more widely spread formation in this western area is the Nummulitic division, consisting of shales and sandstones capped by a bed of limestone, which is shallow in Lower Burma but increases in thickness towards the north, and is of very considerable depth in the neighbourhood of the Chin Hills in Upper Burma. The petroleum of the Province is found in the still younger sandstones of what is known as the Pegu (geological) division. Coal and amber are present in the beds of this division, which contain a large proportion of the mineral wealth of the Province. These beds are of marine origin, but are overlaid by fluviatile layers of soft yellow sandstone (Miocene), containing concretions of exceedingly hard siliceous sandstone and subordinate bands of ferruginous conglomerate, which cover a very large portion of the valleys of the Irrawaddy and the Chindwin. Volcanic activity during the deposition of the Tertiary formations in Upper Burma is responsible for the presence of jade and gold in the northern portions of the Province.

In the main eastern division, the hilly country to the east of the Irrawaddy-Sittang valley (comprising the Ruby Mines District, the Shan States, and the Karen Hills) is almost entirely composed of rocks older than Tertiary, ranging from the Primary gneisses of pre-Cambrian age to Mesozoic (Jurassic or Cretaceous). The gneisses of the Ruby Mines District contain bands of crystalline limestone, in which rubies, sapphires, and spinels occur. In the Northern Shan States, which have

been more thoroughly studied than most of Upper Burma, the gneisses are followed southwards by a considerable thickness of mica schists, and dykes of tourmaline granite occur near their junction. In this area the formations have been found to belong to the Devonian, the Silurian, and Cambrian systems of geological sequence. The lowest beds consist of quartzites, greywackes, and slaty shales, above which are Silurian strata composed of limestones, calcareous sandstones, and shales exceedingly rich in fossils. In certain localities beds of sandstone and conglomerates are found. The surface of the Shan plateau is a great thickness of limestone (Maymyo limestone), which extends from near Maymyo to the Salween. This limestone is generally greatly crushed and brecciated, and the fossils it contained have for the most part been destroyed, but there is reason to believe that it includes beds of carboniferous as well as of Devonian age. In several different localities on the surface of the plateau beds of shale are found containing numerous fossils, the relation of which to the Maymyo limestone has not yet been clearly made out. To the east of Hsîpaw a series of red sandstones with subordinate bands of limestone is largely developed, folded or faulted in among the Maymyo limestone. North and south of Lashio are beds containing thick seams of lignitic coal. In the Southern Shan States a great series of limestones, probably representing the Maymyo limestone, has been found. Farther south again in the Paunglaung range, east of the Sittang, the hills are composed chiefly of crystalline gneissic rocks. The hills separating Amherst, Tavoy, and Mergui from the Siamese border appear to be a prolongation of the Paunglaung and neighbouring ranges. They consist of palaeozoic beds belonging to what have been termed the Moulmein and Mergui groups, and of gneissic rocks. It is in these that the tin-bearing areas of the Province occur[1].

Botany.

The coast of Burma shows the usual mangrove forest vegetation prevalent along most tropical shores. Farther inland the mangrove pass into tidal forests, where scrubby vegetation is prominent and climbers abound. The herbage here consists of a few coarse sedges and grasses. In the moist climate of Tenasserim, on the lower levels, typical evergreen tropical forests are found, with shrubby vegetation largely developed, and abounding in climbers. At higher elevations oaks, chestnuts, and rhododendrons occur, the soil is covered with grass, and

[1] The material from which the geological paragraphs have been compiled was furnished by Messrs. La Touche and Datta of the Geological Survey.

herbs and gentians, lobelias, umbellifers, and violets are met with, while epiphytic orchids and mosses and lichens clothe the trees. Along the eastern base of the Pegu Yoma the vegetation is of the nature of open tropical forest, but the Yoma itself is clad with deciduous forest, bare of leaves in the hot season. Bamboos here, as elsewhere, are abundant; climbers are not uncommon; but orchids and other epiphytes are somewhat scarce. The Irrawaddy valley in Lower Burma shows a mixed forest and vegetation towards the Pegu and Arakan Yoma: climbers and bamboos are common, and orchids not infrequent. Near the river the forest merges into a savannah land of coarse grasses, with here and there swamp forests. In the dry climate of Upper Burma a characteristic scrubby desert flora prevails. Bordering the western flanks of the Shan Hills is the usual typical *tarai* jungle, while at a higher elevation the uplands are covered with evergreen forest, which, at an elevation of about 4,000 feet, merges into an open rolling plateau with a temperate vegetation of such forms as *Ranunculus*, *Viola*, and *Polygala*[1].

Characteristic wild animals.

Most of the larger animals that have their habitat in India are found also in Burma. In the jungles of the north, and in portions of Lower Burma, elephants are fairly plentiful. Tigers abound, save in the Districts of the dry zone, where there is barely sufficient cover for them. Leopards are common everywhere, and make their presence felt far more than do their larger congeners. The rhinoceros is at times found in the swampy levels of both the Upper and the Lower province, and in the extreme south tapirs have been occasionally seen and shot. It is doubtful whether the wild buffaloes that are at times met with are really indigenous, or whether they are merely beasts, or the progeny of beasts, that have strayed from their herds and become wild within recent years. The *hsaing*, *tsine*, or *banteng* (*Bos sondaicus*), is not found in India proper. Bison can be obtained in the remoter parts of the forests. The deer family is represented by the *sāmbar*, the hog deer, the *thamin* or brow-antlered deer (*Cervus eldi*), and the barking-deer. Several varieties of monkey are indigenous to the country, and gibbons (*Hylobates hoolock*) make the forests re-echo with their yelping, which is very like the music of a pack of fox-hounds giving tongue. The orang-outang is said to have been seen in the portions of Tenasserim adjoining the Malay Peninsula. Among birds, the peacock (which differs

[1] The botanical paragraph has been prepared from materials for which the Editor is indebted to Major Prain, I.M.S.

from the Indian bird), the pelican, the vulture, and the hornbill may be mentioned. Partridge and pheasants of different kinds are distributed over the Province, and every considerable stretch of jungle swarms with jungle-fowl. The *sāras* crane is frequently seen among the paddy-fields, and in the cold season the country is visited by myriads of ducks, geese, snipe, and teal. The cobra, the Russell's viper, and the *Bungarus* (or *karait*) all infest Burma, and in some localities the hamadryad has been met with. Pythons are common and at times attain enormous dimensions. The best-known fish are the hilsa (*Clupea ilisha*), the mango fish (*Polynemus paradiseus*), and the mahseer. Crocodiles and turtle are found in the greatest numbers in the delta of the Irrawaddy, but are not uncommon elsewhere. Porpoises are occasionally seen in the upper reaches of the Irrawaddy and the Chindwin.

Climate. Burma has long enjoyed an unenviable notoriety in the matter of climate, but is slowly outgrowing its reputation as an irredeemably pestilential region. Malarial fevers are very prevalent in certain localities, and the Province still possesses towns, such as Kyaukpyu and Kengtung, which are deplorably unhealthy; but jungle-clearing and conservancy have worked wonders in the past few years in reducing the tale of these penal settlements, and now, whatever may be said of the jungle areas, the majority of places inhabited by Europeans are as salubrious as average stations in the East. For the greater part of the year Lower Burma is a most relaxing place of sojourn, but it is by no means as deadly as it is often supposed to be; and the dry zone of Upper Burma is, except for a few weeks in the spring and autumn, neither overpoweringly hot nor remarkably unhealthy. Life in Burma is often, it is true, a burden to the enervated foreign resident, but his bodily discomfort has but little connexion with his state of health, as gauged by the bills of mortality; for the close, steamy days of the early monsoon are not so dangerous as the cooler, but more treacherous, period that ushers in the cold season, and March and April, two of the most burdensome months of the twelve in the dry Districts, are nevertheless among the healthiest.

Seasons. Generally speaking, the rainy season may be said to commence with the third week in May and end with the third week in October. In the wet Districts the rainfall of May and September, though high, is rather lower than that of June, July, and August; and July is ordinarily, it may almost be said invariably, the wettest month in the year. In the dry zone, on the contrary, the beginning and end of the wet season give, as

a rule, the heaviest rainfall. July and August in this area are marked by strong, steady winds almost devoid of moisture, and it is only when these drop that showers occur to any extent. In Upper Burma the beginning of October is sometimes very wet, but by the end of the month the dry season has set in. The period between November and April forms the dry moiety of the year, when rain is the exception not the rule. The first half of this period is known as the cold season; the second as the hot season. December and January are, even in Lower Burma, moderately cool. In Upper Burma the three months from the middle of November to the middle of February are uniformly pleasant. From the latter date there is a marked rise of the thermometer till, shortly after the end of April, the temperature is sent down by the first showers of the monsoon period.

Temperature. The average temperature and rainfall of the Province are shown in the first table printed at the end of this article. The mean and the diurnal range of four representative months are there given for six typical plains stations and for Maymyo, a hill station on the edge of the dry zone of Upper Burma. Perhaps the most noticeable feature of the figures is the relative variation in these monthly means. In Mergui the highest monthly average shown in the table is less than 4° higher than the lowest, and in Rangoon less than 8°, whereas in Bhamo the January and May means are separated by over 20°, and in Thayetmyo and Mandalay by over 18°. Where the rainfall is heavy (i.e. exceeds 60 inches per annum) the average maximum summer temperature in Burma seldom rises much above 94°; where it is light, the corresponding figure may be put roughly ten degrees higher, namely, at 104°. The minima are less affected by rainfall than the maxima; hence, in the cold season, latitude rather than moisture is the determining factor. Speaking generally, we may take 60° as the level below which the temperature of Lower Burma seldom falls, while for Upper Burma the figure must be placed about ten degrees lower. The extremes of temperature are thus found in Upper Burma, where the range is about 20° greater than in Lower Burma.

Rainfall. The second table indicates the striking disparity of the rainfall in different portions of Burma, and shows the distribution of the rain over the months of the year. In the natural divisions of Burma referred to above the average annual rainfall is roughly as follows: in the Upper Burma wet division, 70 inches; in the Upper Burma dry division, 37 inches; in the

Lower Burma littoral, 180 inches; and in the Lower Burma sub-deltaic, 62 inches. The Upper Burma divisions present little variation in the rainfall of their component Districts. In the Lower Burma littoral division, however, the average ranges from 200 inches in Tavoy and Sandoway to 97 in Rangoon, the figure for the latter area being little more than half of the divisional average, while in the sub-deltaic division the mean lies between Henzada, with nearly 90 inches, and Thayetmyo, with very little over 30.

Storms. Storms at the head of the Bay of Bengal are rarely felt south of 20° N., and then only in the immediate neighbourhood of the Arakan coast. Storms and cyclones in the Bay near Burma generally occur during the rainy season. They are of most frequent occurrence during May, though records show that April and November are not free from severe climatic disturbances. Of the May storms those of 1884, 1890, 1897, 1899, and 1902 may be mentioned. The last did much damage in Rangoon and its immediate neighbourhood. Frequent squalls occur during the south-west monsoon. Those near the Arakan coast are apparently due to the obstructive action of the Arakan Yoma, which is from 1,000 to 4,000 feet in height and diverts the direction of the monsoon currents.

Earthquakes. Earthquakes of note have occurred only twice in recent years. On October 10, 1888, a fairly severe shock was felt in Rangoon, which wrecked the vane on the top of the great Shwedagon Pagoda. On the 13th and 14th of December, 1894, a series of severe shocks again occurred in Rangoon and its neighbourhood. Considerable damage was done to buildings in the town, but there was no loss of life.

Floods. Destructive floods on a large scale are unknown in Burma. Where, as for instance in the Irrawaddy delta, inundation might result in serious damage, most of the low-lying tracts exposed to this danger are fully protected by an elaborate system of embankments. Outside these specially guarded areas the rise of the waters at flood-time is so well known, and can be so accurately gauged, that it is quite the exception for loss of life or property (other than growing rice) to occur even in the highest floods.

History. Early dynasties. Burmese history, as recorded by indigenous chroniclers, goes back to an exceedingly remote period, and its earlier chapters deal with events that are for the most part obviously legendary, but of interest in so far as they afford a clue to the distribution over the country of the various races that claim Burma as their home. It is impossible to place a finger on the precise point

at which fact begins to emerge from fable. Our present knowledge of the people of the country enables us to dismiss as wholly fabulous the story that the first princes of Burma came from Benares. It is clear, however, that the Burmans, in their progress down from their northern prehistoric home in Central Asia, first established themselves as a political entity in the country round the northern reaches of the Irrawaddy. Their earliest-known capital was Tagaung, a town on the left bank of the river, in what is now the Ruby Mines District of Upper Burma. It may be necessary to accept with some reserve the statement, put forward by the early Burmese historians, that a dynasty was founded here at the beginning of the tenth century B.C.; but that this settlement took place at a very early era is clearly indicated by the story of a branch which, after the foundation of Tagaung, spread westward, first into the Chindwin valley and next into the vicinity of the Kaladan river in NORTHERN ARAKAN. This migration can have been nothing more or less than the diversion to the western coast lands of the peoples who subsequently became the Arakanese, and who in all probability separated from the Burmans during the early centuries of the Christian era. Subsequent movements of parties into the Shan States and down the Irrawaddy, alluded to in these early annals, point to a possible solution of the problems connected with the origin of the Taungyos and Inthas, and conceivably of other Tibeto-Burman hill tribes now resident on the confines of the Province. It was during this early legendary period that a section of the primitive Burmese community, forsaking the main body, pressed southward and founded, in the borderland between the dry and wet zones of the country, the dynasty of the Pyus at PROME, which for many years was the centre of Burmese tradition.

The Tagaung dynasty.

Founding of Arakan.

The Prome dynasty.

From very early days the southern portion of what is now Burma was in the hands of the TALAINGS or Peguans. The Talaings are representatives of an even earlier immigration wave than the Burmans, namely, the Mon-Anam; and it seems possible that their political beginnings, which had THATON as their earliest centre, were almost as early as those of the Burmans, though their chronicles do not profess to go back so far. War between the different races of the country was a common feature of their history. In 104 B.E. (A.D. 742) Prome was destroyed by the Talaings, and a new Burmese kingdom was established at PAGAN, which for five hundred years was the head-quarters of Burmese rule. From the eleventh to the

The Pagan dynasty.

thirteenth century the old Burmese empire was at the height of its power, and to this period belongs the greater part of the architecture which still survives in the shape of picturesque ruins on the site of the ancient capital, Pagan. The most famous of its rulers was Anawrata, who invaded and conquered the Talaing kingdom in the south, brought from Thaton a copy of the Buddhist Scriptures, and revived (if he did not first establish) Buddhism in what is now Upper Burma. One of his successors, Narathu or Kalākyamin ('the king overthrown by the *kalās*' or foreigners), is said to have been slain by assassins. The Pagan dynasty came to an end at the close of the thirteenth century, after the country had been devastated by a Chinese-Shan invasion, Narathihapade, the monarch reigning at the time, being still known as Tayokpyemin, 'the king who fled from the Chinese [1].' The Burmese hold over Pegu and Arakan (which appears to have acknowledged the suzerainty of Pagan) was lost, a succession of Shans and quasi-Shans obtained the upper hand, a number of independent principalities with capitals at Pinya, Sagaing, and elsewhere came into existence, and no conspicuous Burmese house held sway till the early part of the sixteenth century, when the rulers of the dynasty of TOUNGOO in the south began to assert themselves. The Toungoo kings, of whom Tabinshweti and Bayinnaung are the most famous, made themselves masters of the Talaing kingdom, took Pegu as their capital, obtained temporary possession of Arakan, and subjugated the Burmese country of AVA. It was in the days of the Toungoo dynasty that European countries first entered into commercial relations with Burma. In 1619 the Portuguese signed a treaty with the Burmese king of Pegu, and established factories at Syriam and Martaban (practically the present-day Rangoon and Moulmein). The close of the sixteenth century found the Dutch in possession of the island of Negrais, off the coast of the existing Bassein District; and early in the seventeenth century the English East India Company had established agencies and factories at Syriam and Prome as well as at Ava, which had been founded in 1364 by Thadominpayā, and had by that time become the political centre of the Burmese (Toungoo) kingdom. During the rest of the seventeenth century the British were strengthening their commercial position in the country. Towards the middle of the eighteenth century the Talaings of the south revolted, shook off the Burmese yoke, and turned the tables on their late conquerors by

The Toungoo dynasty.

[1] *See* Myingyan District article.

laying siege to and burning Ava. The supremacy thus passed into the hands of the Peguans, and it was from the dominion of this Mon dynasty that the Burmans were rescued by their great king Alaungpayā.

Alaungpaya (Alompra). The opening years of the second half of the eighteenth century saw two reigning houses established in what is now Burma proper, the Arakanese to the west of the Arakan Yoma and the Peguan to the east. The various states that had gone to make up the Burmese empire had been amalgamated into one and had been recently brought under the Talaing yoke. Born in Shwebo, and originally the headman of a small town in that District, Alaungpayā, or, as he was originally called, Aung Zeya, commenced, in 1752, his career of revolt against the foreign conquerors; and between this date and 1760, when he died on his return from an inroad into Siam, he had succeeded in driving the Talaings out of Ava and, carrying the war into the enemy's country, had re-established the Burmese power in the whole of the southern as well as of the northern portion of the Province, and had invaded both Manipur and Siam. The town of RANGOON may be said to have had its real beginning in Alaungpayā's reign. It was founded in 1755 to commemorate the conquest of the Talaings, and, as a token of the termination of hostilities, received its existing name, which means, 'the finish of the war.' Trade was not immediately attracted to the new city of peace. Commercial interests centred round Syriam, a town close to Rangoon but separated from it by the Pegu river; and during the struggle between the Burmans and the Talaings the British and French merchants at this station found considerable difficulty in adjusting their policy to the varying fortunes of war. When victory had finally declared for the Burmans, Alaungpayā emphasized his position by putting to the sword the French traders, who had on the whole been better disposed towards the Peguans than towards their opponents. The British, on the other hand, obtained increased facilities for commerce, but their evil day was deferred for a while only, for, in 1759, they in their turn were massacred at Negrais; the factories they had established were demolished; and it was not till the reign of Alaungpayā's successor that trading rights were restored to the foreigners by the Burman king.

Alaungpayā's successors. This monarch was Naungdawgyi, Alaungpayā's eldest son, who reigned from 1760 to 1764, and was succeeded by his brother Sinbyushin (1764–76). The latter invaded Siam and Manipur, added a portion of the Shan States to the Burmese

kingdom, and successfully repelled two Chinese invasions. On his death the throne was occupied by his son, Singu Min, during whose reign Siam passed finally out of the hands of the Burmans. Singu Min died a violent death and was succeeded in 1781 by his cousin, Maung Maung, a son of Naungdawgyi; but this prince reigned for a few days only and was then put to death by his uncle, Bodawpayā, fifth son of the great Alaungpayā. Under the new ruler Burma was extended to what are practically its existing limits by the final subjugation of the Arakanese kingdom (1784), the cession of the Kubo valley, as the result of an invasion of Manipur, and a peace concluded with Siam in 1793, whch left the Burmese in possession of the coast of Tenasserim and the ports of Tavoy and Mergui. In 1783 the capital was moved from Ava to AMARAPURA.

Bodawpayā.

By the conquest of Arakan the Burmans were brought into direct political contact with the British Government. Disputes arose with Calcutta regarding the extradition of Arakanese fugitives. They were, however, temporarily settled in 1794. In 1795 the Government of India dispatched an envoy (Captain Symes) to Burma, to strengthen the commercial and political relations with the Court of Amarapura. Little came, however, of this and of subsequent missions, and a representative who was sent to Amarapura in 1796 was forced by a succession of indignities to withdraw two years later. In 1819 Bodawpayā died and his grandson, Bagyidaw, succeeded. In 1822 Assam was overrun and declared a Burmese province, but this annexation added the last of its jewels to the Burmese crown. Aggressions from the newly acquired provinces of Arakan and Assam into British territory provoked hostilities with the Indian authorities, and in 1824 the British Government formally declared war against Burma. Operations were conducted on a limited scale on the Assam border; but the main advance on Ava (to which the seat of the government had been retransferred in 1822) was up the Irrawaddy, the invading body being under the command of General Sir Archibald Campbell. The river was entered May 10, 1824. No serious resistance was offered at Rangoon. The town was invested and the troops were landed there, but no further progress was made towards Ava for several months. The rains, which were then at their height, rendered active operations exceedingly difficult, the troops suffered heavily from sickness, and during the monsoon Sir Archibald Campbell had to satisfy himself with obtaining control of Pegu, Martaban, Tavoy, Mergui, and the Tenasserim coast, and maintaining his position in Ran-

Bagyidaw.

First Burmese War.

Investment of Rangoon.

goon. At the beginning of the cold season active operations recommenced. The redoubtable Burmese Mahā Bandula, or 'commander-in-chief,' a general who had covered himself with glory in the operations against Assam, was recalled from Arakan and sent to the front; and by the end of November an army of 60,000 men under this leader was surrounding the British position at Rangoon and Kemmendine, for the defence of which only 5,000 efficient troops were available. Despite the heavy odds against them the invaders were able to hold their own. A succession of attacks was directed against Kemmendine by a strong body of Burmans, but they were ineffectual, and on December 7 the Burmese general's numerically superior force was completely routed.

Operations in Arakan.

Early in 1825 operations in Assam had resulted in the capture of all the enemy's posts there and the granting to them of terms which involved their evacuation of the country. Simultaneously with these operations an expedition was dispatched from Chittagong into Arakan under General Morrison. Myohaung, the capital, was occupied on the 1st of April and the subjugation of the rest of the Province was easy. By the hot season of 1825, practically all the outlying portions of what is now Lower Burma, including Bassein, were in the hands of the British, and the ground had been prepared for the advance up the Irrawaddy to the Burmese capital. Two columns proceeded from Rangoon northwards in February, 1825, one by land and one by river. The opposing force was entrenched at Danubyu, a town on the western bank of the Irrawaddy, which was attacked on April 1 by the land and river forces and taken after two days' assault, the Mahā Bandula having been previously killed. Prome was occupied by the British three days later, and after an abortive attempt to settle terms had been made at Nyaungbinzeik, offensive operations were resumed. Several skirmishes followed in the neighbourhood of Prome and a Burmese force of 60,000 men invested the town; but on December 1 they were completely routed and retired to Myede, a town close to what subsequently became the frontier between Upper and Lower Burma. Driven out of Myede, they made another stand at Malun, and here they were allowed to stop while a further attempt was made to come to terms. Meanwhile a British force had moved from Pegu into the valley of the Sittang, and by the middle of January, 1826, had reduced the most important posts in that region. The Malun negotiations proved ineffectual; the Burmans were pressed back on Pagan, whence they were driven

Advance on Ava.

Treaty of Yandabo.

on February 9; and the British advanced to Yandabo, four marches south-west of Ava. Here at length the Burmans accepted the terms already offered to them, which involved the cession of the provinces of Arakan and Tenasserim, the abandonment of claims upon Assam and the small States in its vicinity, and the payment of a war indemnity, and provided for the appointment of political agents and other matters. This concluded what is known as the first Burmese War.

The removal of the British troops from Pegu on the cessation of hostilities encouraged the Peguans to make a final effort to shake off the Burmese yoke. At the beginning of 1827 they revolted under the Talaing governor of Syriam, but were defeated and have never since attempted to regain their independence. There was considerable delay before the Burmans could be prevailed upon to comply with all the conditions of the Treaty of Yandabo, notably in connexion with the payment of the war indemnity, and the patience of the Residents sent to the Court of Ava in the years immediately following the war was tried to the utmost. The first Resident was accredited in 1830, but it was not till two years later that the final instalment of the indemnity was paid.

Tharrawaddy.

In 1837 the king of Ava (Bagyidaw), who had for several years been insane, was deposed by his brother Tharrawaddy, who took Amarapura for his capital. This monarch's attitude towards the British was even less conciliatory than that of his predecessor; the relations between the two Governments became more and more strained; and in 1839 the British Resident was withdrawn and no further attempt was made to maintain friendly political intercourse with the Burmese Court. Tharrawaddy's reign lasted till 1846. Towards the end of his life he, like his brother, became gradually insane and his last years were spent in confinement. On his death his son, Pagan Min, was proclaimed king, but the new ruler did nothing to bridge over the differences between the British Government and Independent Burma: in fact he widened the breach, and in 1851 matters were brought to a head by the illegal arrest and punishment in Rangoon of the masters of two British merchant vessels. The steps taken to redress the grievances complained of by the British Government were an empty show, and the warlike preparations made by the Court of Amarapura left no course open to the Governor-General but to take severe measures.

Pagan Min.

Second Burmese War.

Hostilities commenced with the bombardment by a British man-of-war of the Rangoon stockades, and as this operation

had no effect on the Burmans, a land force was dispatched under General Godwin. The capture of Martaban on April 5, 1852, was the first incident of note in this second Burmese War, and was followed a week later by the occupation of Rangoon and the seizure of Bassein. Pegu was taken in June after some sharp fighting. In July operations were conducted on the Irrawaddy by a small squadron of steamers, and the enemy suffered a series of reverses off Prome and elsewhere on the river. On September 27 an advance was made on Prome in force, and the town was captured on October 12, after a feeble resistance. Shortly after this it was found necessary to retake Pegu, which, after its capture earlier in the year, had been left in charge of the Talaings and had been lost by them to the Burmans. The town was regained; but the little garrison left behind when the main body of troops returned to Rangoon was before long beleaguered by the enemy, and its relief was not effected till a considerable force had been sent. Towards the end of 1852 the hold of the British over the province of Pegu was so complete that a proclamation annexing it was issued and a treaty providing for its cession was prepared. This latter document was, however, never ratified. King Pagan Min was dethroned at the beginning of 1853 by his half-brother, Mindon Min; and as the new ruler would have nothing to do with the treaty, measures were taken for the occupation of the whole Pegu province, which passed to the British without formal cession.

Capture of Prome.

Deposition of Pagan Min.

Annexation of Pegu.

The pacification of the new province and its reduction to order was a long and troublesome undertaking; but eventually, in 1862, the British possessions in Burma, Arakan, Pegu, Martaban, and Tenasserim were amalgamated and formed into the Province of British Burma under a Chief Commissioner, the first ruler of the combined Province being Lieutenant-Colonel (afterwards Sir Arthur) Phayre.

Province of British Burma.

In 1857 the Burmese capital was moved from Amarapura to Mandalay. The history of the succeeding few years is mainly a record of diplomatic moves and countermoves made in connexion with the attempt to establish fair commercial relations between British and Independent Burma. In 1862 a treaty was signed which opened the Irrawaddy to trade; and, to encourage commercial relations, the British agreed to forgo lucrative customs duties levied in the past on the frontier. The Burmans, however, failed to fulfil adequately their share of the stipulations, and in 1867 a second treaty was found necessary. This reaffirmed the previous agreement and, among other

Reign of Mindon Min in Upper Burma. Trade negotiations.

matters, put a limit on the creation by the Burmese king of some objectionable monopolies, which severely handicapped trade in his dominions. But Mindon Min found means for eluding the provisions of this treaty also; and, what with the evasion of their obligations and their treatment of British subjects, the Burmans had succeeded by 1878 in making the relations between Mandalay and Rangoon very strained. This was the last year of Mindon Min's reign, a period which, but for a revolt in 1866 involving the murder of the heir-apparent by two princes of the blood royal, was one of comparative internal tranquillity. In 1868 and 1874 expeditions were sent by the British into south-west China with a view to improving the trade between China and Burma. One of the members of the second expedition, Mr. Margary, was murdered by the Chinese, and the party was forced to return without having effected its object.

Thībaw. When Mindon Min died and his son Thībaw succeeded him, it was hoped that the new ruler's reign would inaugurate happier relations with the British Government, but a very short time sufficed to show that this hope was vain. A few months after his accession Thībaw displayed his character by a general massacre of the numerous direct descendants of his predecessor, and made it clear that there was to be no change for the better. The Resident at Mandalay protested strongly against the murder of the princes and princesses, and tried to obtain the release of the few survivors who were in custody; but his good offices were rejected, and in October, 1879, political relations with the Burmese Court were broken off. The second edition of the *Imperial Gazetteer* sums up the situation, as it existed when the volume dealing with Burma went to the press, in the following words:—

'In spite of various disquieting rumours, no breach of peaceful relations between the British and Burmese Governments has yet occurred; and although no British Resident is stationed at Mandalay, direct communication has been maintained with the Ava Court.'

His anti-British policy. The storm did not burst till 1885. That the blow did not fall earlier was due in a great measure to the foreign complications which were engaging the attention of the British Government during the first half of the six years of Thībaw's reign, and which rendered expedient an attitude of extreme forbearance towards that ill-advised monarch. In 1880 and 1882 pretences to enter into negotiations with the British were made by the Burmese Court; and in 1883 Thībaw sent a

mission to Europe which visited a number of the important countries and cities of the Continent, ostensibly with a view to studying Western industrial methods, but in reality to establish with France precisely those friendly relations which his action had rendered impossible with Great Britain. From 1882 to 1884 there was considerable friction in connexion with the demarcation of the Manipur-Burma frontier, and later on other causes for complaint arose. These culminated in the imposition by the Hlutdaw, or High Court of Mandalay, of a fine of 23 lakhs, on an alleged charge of fraud, upon the Bombay Burma Trading Corporation, a British company which had obtained the right of extracting timber from the forests of Upper Burma. A request made by the Chief Commissioner of British Burma that the questions at issue between the corporation and the Burmese officials should be fairly and exhaustively investigated by an impartial tribunal was flatly rejected, and there was nothing left for the British Government but to send Thībaw an ultimatum which aimed at a settlement, once and for all, of all the main matters in dispute between the two Governments. The reply to this ultimatum, which was eminently evasive and unsatisfactory, was followed by a proclamation issued by Thībaw to his subjects, intimating that armed force was to be opposed to any attempt made by the British to enforce their demands. On November 11, 1885, instructions to advance on Mandalay were telegraphed from England, and hostilities commenced without further delay.

Third Burmese War.

An advance was made up the river by a fleet of river steamers under General Prendergast; and the brick fort at Minhla, the first station of importance north of the frontier, was attacked and taken after a sharp action, the fort on the opposite bank of the river being evacuated without resistance. Nyaungu (Pagan) and Myingyan farther up the river were occupied without serious opposition, and some little way above the latter town envoys met the expeditionary force with offers of terms. They were informed that a complete surrender of the capital and troops was a condition precedent to further negotiations; and, pending the receipt of an intimation that this stipulation was accepted, the fleet pushed on towards Mandalay. A reply to the British demands was not obtained till a point on the river between Ava and Sagaing had been reached and the troops were on the eve of attacking the former post; but when received it was found that it amounted to an unconditional surrender, and after the Burmese troops at Ava and Sagaing had laid down their arms, a move was made on Mandalay,

Occupation of Mandalay.

which was reached on November 28, 1885. No opposition was offered to the landing of the troops, the palace was reached and surrounded, and on the following morning king Thībaw surrendered to General Prendergast. He was immediately conveyed to Rangoon, and from thence to India; and he now resides as a state prisoner at Ratnāgiri on the Bombay coast, receiving an allowance from the British Government.

Deportation of Thībaw.

Annexation of Upper Burma. Final pacification.

After the occupation of Mandalay a provisional administration was constituted; and before the close of the year Mr. (the late Sir Charles) Bernard, Chief Commissioner of Lower Burma, arrived from Rangoon and assumed charge of the civil administration in Upper Burma also. On January 1, 1886, a proclamation was issued declaring Upper Burma to be part of Her Majesty's dominions. From that date the energies of its responsible rulers were concentrated on the task of pacifying the new territory, which was administratively attached to Lower Burma. For the first five years this work was excessively laborious. The resistance offered was nowhere organized and formidable; the majority of the people acquiesced without a murmur in the new order of things; but everywhere, in Lower as well as in Upper Burma, rebels swarmed in small bands over the face of the country, rarely venturing into the open, and trusting for success to the unhealthiness of their jungle refuges not less than to their mobility and intimate local knowledge of the ground. Against guerrillas of this type regular troops were of little avail, and special measures had to be taken for coping with the special conditions of resistance. A stringent disarmament policy, and the supersession of regulars by military police, stationed thickly in small posts over the disaffected areas, gradually wore down the undisciplined opposition; the political ends that for a time made heroes of the outlaws dropped out of sight by degrees; and long before the last of the original gangs had been hunted down or broken up, it had been recognized by all that each fresh success of the police meant so many men of bad character accounted for and so many pests to society removed. The most serious rising in Burma proper between the beginning of 1886 and the end of 1891 was a rebellion in Wuntho, a Shan State lying to the west of the Irrawaddy between the Upper Chindwin and Kathā Districts. It broke out early in 1891, but was promptly suppressed with considerable loss to the insurgents; the Sawbwa (chief) took to flight and his territory became part of Kathā District. The crushing of this rising may be looked upon as having dealt the deathblow to organized rebellion in Upper Burma. From

time to time since annexation the hill tribes on the frontiers of the Province, notably the Chins on the north-west and the Kachins and Was on the north and north-east, have given trouble, sometimes serious enough to justify the dispatch of expeditions against them; and it would be unsafe to affirm that cause for anxiety no longer exists in the north-eastern regions, and that armed force will never again be necessary. So far, however, as Burma proper is concerned, the establishment of order may be said to have been fully achieved, and the acceptance by the people of the British as their undisputed rulers is now full and unhesitating. The annexation of Upper Burma made the Chief Commissioner at Rangoon Chief Commissioner for Burma as a whole, and in 1897 the growing importance of the enlarged Province led to its development into a Lieutenant-Governorship.

Foreign relations. The relations of the Province with Siam and China since the annexation of Upper Burma have been friendly. In 1883 a treaty concerning Chiengmai and the adjacent provinces was concluded with Siam, and in 1892–3 a joint Commission of English and Siamese officers demarcated the frontier between Siam and the trans-Salween Shan States. Mr. Margary's murder, referred to in an earlier paragraph, was made the subject of negotiations with the Chinese, which ended in an agreement signed at Chefu in 1876. A convention signed at Peking in 1886 provided for the recognition by China of British rule in Burma, and for the delimitation of the frontier between Burma and China. The boundary as far north as latitude 25° 35′ N. was subsequently defined, first by a convention in 1894, and later by a supplementary agreement in 1897; and the demarcation of the greater part of the frontier was effected by a joint Boundary Commission between 1897 and 1900. The demarcation of a portion of the boundary has not yet been finally completed, and in the extreme north the frontier to the east of the N'maikha has not been settled. In 1894–5 negotiations were opened with France for the creation of a buffer state between the British and the French territory; but these fell through, and in 1896 the Mekong was fixed as the boundary line between British and French territory to the east of Kengtung.

Archaeology and architecture. Before his death in April, 1890, Dr. Forchhammer, late Government Archaeologist, completed a detailed archaeological survey of Akyab, Myohaung, Launggyet, Minbya, Urittaung, and Sandoway in Arakan, and of the Kyaukku temple at Pagan. Since 1890 archaeological work in Burma has been carried on somewhat spasmodically. No detailed survey of any locality

in Burma proper has been executed; but a close study of the inscriptions and native histories has revealed the fact that, as the religion, letters, and civilization of Upper Burma were influenced by Magadha, Nepāl, Tibet, and China, so those of the Talaings of Lower Burma were affected by Ceylon, Southern India, and Cambodia, and that these two streams of influences finally coalesced at Pagan in the eleventh century, when the Burmese king, Anawrata, subverted the Talaing kingdom of Thaton, and led its monarch, Manuha, captive to Pagan together with the learned monks and literary treasures of the conquered race.

Archaeological exploration of the following sites may be expected to yield interesting results: Yazagyo and Myeyin in the Chindwin Valley, Tagaung, Prome, Pagan, Ava, Pegu, Toungoo, Thaton, and Taikkala.

Shwebo, Sagaing, Amarapura, and Mandalay are modern sites dating from the middle of the eighteenth century. At these places the wooden architecture, especially that of the Mandalay Palace and the royal monasteries, deserves minute study.

Population. Census statistics.

The total population of the Province at the Census of 1901 was 10,490,624. This total includes, besides the residents of those areas where a regular synchronous or non-synchronous enumeration was carried out, the inhabitants of a few of the most backward of the Hill Tracts where the population could only be estimated. The estimated areas contained a population of 127,011, so that the aggregate of persons regularly treated was 10,363,613. For Burma proper, exclusive of the Shan States and the Chin Hills, the density in 1901 was 55 persons per square mile (49 in rural areas). In 1891 the corresponding figure was 46, and at the Census of 1881 it was 43 for what was then British (or Lower) Burma. Of the four natural divisions of the Province described above, the Lower Burma sub-deltaic is the most thickly populated. Its average is 90 persons per square mile, and one of its Districts (Henzada) shows the highest density of any of the rural Districts in the Province. The Upper Burma dry division comes second in order with 79 persons per square mile, and the Lower Burma littoral division follows with 55. Some of the Lower Burma littoral Districts can boast of a fairly dense population, but the divisional average is reduced by the hill areas of Arakan and Tenasserim, whose dwellers are exceedingly scattered. The Upper Burma wet division is far the least populous of the Province, its average being only 15 persons per square mile. The density for the whole of Burma, including

the poorly populated areas which were enumerated for the first time in 1901 as well as Burma proper, is 44 persons per square mile (40 in rural areas).

Towns and villages.

In all, 989,938 of the persons dealt with at the last Census lived in towns and 9,500,686 in rural areas. Burma contained, in 1901, two cities (Rangoon and Mandalay) with more than 100,000 inhabitants, 19 towns with a population of over 10,000, and 25 with 5,000 and more. The following are the population totals for the principal towns: Rangoon, 234,881; Mandalay, 183,816; Moulmein, 58,446; Akyab, 35,680; Bassein, 31,864; Prome, 27,375; Henzada, 24,756; and Tavoy, 22,371. Villages with more than 500 inhabitants numbered 2,447, and smaller villages 57,948. The Burmese village or hamlet is as a rule a very compact unit. Each house stands in its own separate compound or enclosure, and the whole collection of dwellings is often surrounded by a bamboo fence or a thorn hedge. For administrative purposes the village headman's charge consists ordinarily of several of these hamlets.

Growth of population.

In Burma proper (that is, excluding the Shan States and the Chin Hills) the population rose during the ten years 1891–1901 from 7,722,053 to 9,252,875, or by 19·8 per cent. As Upper Burma was not dealt with in 1881, it is not possible to make any further comparison of the figures for the whole Province; but in Lower Burma, which has now been British for over fifty years, the figures show that from 1872 to 1881 the rate of increase was 36 per cent., from 1881 to 1891 24·7 per cent., and from 1891 to 1901 21·2 per cent. This large growth is due almost wholly to immigration from outside, which has no real emigration to counterbalance it: there is nothing to show that the excess of births over deaths within the Province is at all above the normal. The part that immigration plays in the movement of the population is strikingly brought out by the District figures, for without exception the rise is most marked in the rice-producing areas of the delta, which annually attract large numbers of agriculturists from Southern India. Prome, Mandalay, and Thayetmyo alone of the Districts of the Province showed a falling off in population at the Census of 1901, caused by the exodus of the indigenous population to the more fertile areas of the Province, notably to the delta Districts. The rate of increase during the past ten years in the Lower Burma sub-deltaic division (of which Thayetmyo and Prome are typical Districts) is only 11 per cent.; that of the Upper Burma dry (in which Mandalay

figures) is only 1 per cent. higher; and it is clear that the tendency is not only for the immigrant Indian population to collect in the wetter portions of the Province, but for residents of the less-favoured areas of the dry zone to move to the more prosperous rice-producing tracts. This relinquishment by the indigenous folk of the less fruitful localities of Lower Burma is a phenomenon of comparatively recent growth. There was no hint of any such movement during the years 1881–91, and in the case of Prome and Thayetmyo it cannot be said that the annexation of Upper Burma has helped to bring it about. No tendency exists on the part of the indigenous population to crowd from the rural areas into the towns. The Burman, fond as he is of gaiety and the amenities of cities, is quite incapable of responding to the calls that town life makes upon his energies. In industrial matters he finds it hopeless to compete with the native of India or the Chinaman; and, though precluded by no caste prejudices from taking up fresh occupations, he soon learns that it is in the non-industrial pursuits of the country that he can best hold his own. There is, in fact, among the people of the country an inclination to forsake urban for rural areas. In the six largest towns of the Province, though the number of foreigners, i.e. Hindus and Musalmāns, was in almost every instance considerably higher in 1901 than in 1891, the total number of Buddhists was either lower than, or only slightly above, the earlier figure. In Upper Burma, where the urban population is recruited less from India than in Lower Burma, a surprisingly large number of towns declined in population within the decade preceding the Census of 1901. Mandalay, whose inhabitants have diminished by close upon 5,000 during the period in question, is a case in point, but there are other towns where the falling off is even more marked. During the preceding decade a decrease in the urban population was quite the exception. To a certain extent the diminution of recent years is due to the growing practice of building houses just outside municipal limits in order to avoid municipal taxation; but this tendency can be held responsible only for a portion of the general decrease, and everything seems to point to the gradual displacement of the Burman in the larger industrial centres and to the concentration of the indigenous folk into the large villages.

There is very little emigration from Burma. Practically all the people who leave are foreign immigrants returning to their homes either temporarily or permanently. The Burman himself rarely moves from the country of his birth. It is probable

that at least one half of the persons indigenous to Burma who were enumerated in India at the Census of 1901 were convicts undergoing terms of transportation in Indian jails.

At the Census of 1891 the mean age of the population was returned as 24·57 years for males and 24·51 for females. In 1901 it was found to be 25·04 for the former, and 24·75 for the latter. Though, judged by European standards, this mean is low, it is not below that of the other Provinces of India. A rise in the mean age, such as is apparent from the above data, is not always a satisfactory feature, but there appear to be good grounds for assuming that in the case of Burma it is not a decline in the birth-rate that has caused the figure to mount. The following figures give the distribution over five main age periods of every 20,000 of the population of the Province in 1891 and 1901:— Age statistics.

	1891.	1901.
0—10	5,283	5,310
10—15	2,341	2,131
15—25	3,758	3,653
25—40	4,342	4,604
40 and over . . .	4,276	4,302
	20,000	20,000

The rise in the lowest age period, in so far as it does not represent greater care devoted to infants during their earliest years, points to a slightly improved birth-rate, while the increase in the highest age period shows that there is no appreciable diminution in longevity.

Municipalities, cantonments, and towns are divided into wards for the purposes of the registration of births and deaths, and the headman appointed for revenue purposes is entrusted with the work of registering domestic occurrences as a portion of his regular duties. He sends his registers of births and deaths at regular intervals to the town authorities, who compile monthly returns submitted to the Sanitary Commissioner. In rural areas, the headman of each village or collection of hamlets registers domestic occurrences on a form printed in counterfoil. A police patrol constable visits each village at least once a month, takes away the foils of all events recorded since his last visit and deposits these documents in the headquarters station of the patrol, whence they are sent to township officers (subordinate magistrates and revenue officers) for compilation into monthly returns. Each township officer sends Vital statistics.

such returns to the Civil Surgeon of the District, in whose office a consolidated return for the whole District is made up and submitted to the Sanitary Commissioner. The book of counterfoils is retained by the headman, and is thus available for examination by inspecting officers.

The particulars registered differ slightly in different localities: thus, in those portions of Lower Burma where registration is in force, both births and deaths are recorded, while in rural areas in Upper Burma deaths alone are recorded.

The birth and death registers in towns, and the books of counterfoils in villages, are checked by District officials, and vaccinators are required to verify entries by house-to-house inquiries and through other collateral information obtained in the course of their vaccination duties. In towns possessing cemetery caretakers, a further check is maintained over death registers by comparison with the registers of burials. The entire Province has not, however, been brought under this system of registration, for there are tracts not accessible to patrols, such as the more mountainous parts and those inhabited by illiterate people or wild tribes. These are treated as excluded tracts, and their area aggregates roughly 54,000 square miles. Tracts not easily accessible to patrols, and with which communications are open only at certain seasons of the year, are considered as irregularly patrolled areas, and are treated separately in the annual returns of vital statistics. All others are regarded as regularly patrolled tracts.

The following table gives details regarding the ratio of registered births and deaths for the years 1881, 1891, 1901, and 1904:—

Year.	Population under registration.	Ratio of registered births per 1,000.	Ratio of registered deaths per 1,000.	Deaths per 1,000 from			
				Cholera.	Small-pox.	Fever.	Bowel-complaints.
1881 . .	3,692,263	19·98	15·75	1·42	0·48	7·51	1·03
1891 . .	4,595,569	20·74	15·93	0·52	0·29	7·76	0·91
1901 . .	5,546,265	32·07	21·74	0·64	0·44	8·65	1·47
1904 . .	8,482,016	32·83	21·07	0·35	0·21	8·90	0·94

The rise under both heads during the two decades in question (a rise which, it may be observed, is very much more marked during the second than during the first) speaks eloquently of enhanced precision in registration; but a comparison of even the most recent Burma figures with the data

obtained in countries where the system of recording vital statistics is admittedly within a measurable distance of absolute accuracy shows that there is still room for improvement in the record of births and deaths in the Province. Birth and death rates vary considerably from District to District, but no purpose would be served by a presentation of figures contrasting the highest and the lowest, except to show where registration was thorough and where the reverse.

Fever, bowel-complaints, cholera, and small-pox are the most frequent causes of death in Burma. Since February, 1905, plague has established itself in Rangoon, has spread to a few Districts inland, and has not yet been eradicated. Fevers are of various kinds, malarial and other; but it should be borne in mind, when considering the mortality statistics of the Province as a whole, that in the mouth of a Burman the expression *pya thi* ('to have fever') is extraordinarily elastic and is usually made to cover, besides fevers proper, almost every disease which has no very marked outward symptoms and possesses no name of its own in Burmese. In certain localities, and at certain seasons of the year, dysentery and diarrhoea are lamentably rife. The larger urban areas of the Province are seldom without some sporadic cases of cholera, but it is only now and then that the disease appears in epidemic form. Vaccination during the past twenty years has enabled good headway to be made against small-pox, which in former days, judging by the large number of pock-marked Burmans that are met with, must have been a scourge of extreme virulence. Of the less serious diseases, worms, diseases of the eye and of the digestive organs, rheumatic affections, and venereal diseases are among the most prevalent. Diseases.

Infant mortality in Burma, judged by a European standard, is very high. How much of the existing state of things is due to a barbarous obstetrical system, and how much to carelessness after birth, is doubtful; but it is clear from the returns abstracted below that one infant out of every four born in Burma dies before the first anniversary of its birthday. Infant mortality.

Year.	Infant population.	Number of deaths under one year.	Deaths per 1,000 of infant population.
1881 . .	88,105	10,779	122·3
1891 . .	125,375	15,219	121·3
1901 . .	132,930	33,488	251·9

The apparent increase in the mortality of children of under one

year of age from 12 to 25 per cent. is at first sight startling, for there are no indications of greater neglect of their children on the part of indigenous parents or of greater sickliness among the infants. The rise is in reality nothing more or less than a sign of more effective registration, and of the gradual disappearance of the belief, so common in backward races, that the concerns of so unimportant a section of the community as babies of less than one year are not a matter that can possibly come in any way within the cognizance of Government.

Sex statistics.

Of the 10,490,624 persons shown in the census returns for 1901, 5,342,033 were males and 5,148,591 females. In other words, 50·9 per cent. of the population of Burma were of the male sex and 49·1 per cent. of the female, or for every 1,000 males there were 962 females. The Census of 1891 showed a similar proportion. It has been held by competent observers that the ratio of females to males in a given race is generally higher or lower according as woman occupies a better or a worse position in the social scale. The absolute freedom of the Burmese women, and the prominent part they play in the industrial no less than in the social life of the country, are phenomena that are very striking to those accustomed to the *zanāna* life of India, and one would expect the emancipated women of Burma to bear a higher proportion to the males than is the case in other parts of the Indian Empire. As a matter of fact, the ratio in Burma is lower than in several other Provinces. This is, however, due to immigration, the male immigrants exceeding the female to a very large extent. In the Districts that are but little resorted to by settlers from India the females are more numerous than the males, and they also predominate in the case of all the principal indigenous races except the Karens and the Talaings. The figures for Burmans are males 3,191,469 and females 3,317,213; for Shans, males 386,370 and females 400,717; and for Chins, males 89,008 and females 90,284. The question of female infanticide does not, fortunately, arise in Burma.

Statistics of civil condition.

The following table gives statistics of civil condition in Burma proper, as recorded in 1891 and 1901:—

Civil condition.	1891.			1901.		
	Persons.	Males.	Females.	Persons.	Males.	Females.
Unmarried .	4,048,637	2,162,144	1,886,493	5,014,809	2,683,030	2,331,779
Married .	2,939,595	1,529,239	1,410,356	3,545,729	1,839,152	1,706,577
Widowed .	617,328	184,918	432,410	669,364	195,848	473,516

Reducing the figures to percentages, they work out thus :—

Percentage in	Unmarried.		Married.		Widowed.	
	Males.	Females.	Males.	Females.	Males.	Females.
1891 . .	28·4	24·8	20·1	18·6	2·4	5·7
1901 . .	28·8	25·0	20·0	18·7	2·2	5·3

Marriage in Burma is a purely civil ceremony and has no religious conception underlying it. Matches are arranged by the parents of the young couple, or through the medium of a go-between, or merely with the mutual consent of the parties. The wedding is ordinarily made the occasion of a feast to which friends are invited, and during the course of which the bride and bridegroom join hands (*let tat*) and eat out of the same dish ; but this ceremony may be dispensed with. The mere fact of living and eating together as husband and wife is sufficient to constitute a legal union. Remarriage both of widows and widowers is common, and the widowed form only a small proportion of the population. Divorce is very freely resorted to, but is generally followed by a second marriage. The figures would appear to show that the readiness to embrace matrimony a second time has, if anything, increased during the last decade.

The statistics of civil condition by age periods show a rather higher total of married girls and boys of immature age in 1901 than in 1891, an increase for which the growth of Indian immigration during the decade is responsible, for infant marriage is not practised by the people of the country. They indicate further a slightly increased tendency on the part of the indigenous male to defer his marriage until after the twenty-fifth year of life. The matrimonial customs of the Kachins and Karens, which restrict their choice of wives to certain families or clans, appear to exercise an appreciable effect upon their readiness to marry. In their case the proportion of married to the total population is very much below that of the Burmans and the Shans. Polyandry is unknown, but polygamy exists, though not to such an extent as to produce any abnormal figures in the sex and civil condition return.

Language.

The indigenous languages of Burma belong, with two exceptions, to the Mon-Khmer and the Indo-Chinese families of language. The latter can be subdivided into two sub-families, the Tibeto-Burman and the Siamese-Chinese. Burmese, the most important of the languages of the Tibeto-Burman sub-family, was spoken by 7,006,495 persons in 1901. Arakanese, a dialect of Burmese, claimed 383,400 speakers in the same

Tibeto-Burman sub-family.

year. Kadu, the vernacular of a tribe in the north-west of the Province which is fast dropping out of use, has been placed provisionally in the Tibeto-Burman sub-family. The Census showed that in 1901 it was spoken by 16,300 persons, and that the Mro of the Arakan Hill Tracts, which has been similarly classified, was the speech of 13,414 inhabitants of Arakan. Kachin and Chin are also Tibeto-Burman languages, not quite so closely allied to Burmese as the others. Their vocabulary differs, but their structure bears a strong family resemblance to Burmese. Kachin was the language ordinarily used by 65,570 persons within the area treated regularly in 1901. A large proportion of the Kachin-speaking folk are inhabitants of the estimated areas, where language data were not collected, and it is probable that the aggregate of Kachin speakers in the Province is nearly double the figure given above. The Chin speakers numbered 176,323. There are various forms of Chin, but the only largely spoken variety that was not classified under the general head of Chin was the speech of the Kamis of Northern Arakan (24,389). The vernaculars of the Lisaws, the Muhsös, the Akhas, the Marus, and of a few other hill tribes in the north and east, are comprised in the Tibeto-Burman sub-family.

Siamese-Chinese sub-family. Shan and Karen are the two main local representatives of the Siamese-Chinese sub-family. Shan proper was the vernacular of 750,473 persons in 1901, Karen was that of 704,835 persons. These totals do not include the speakers of the trans-Salween dialects of Shan known as Hkün and Lü, or the quasi-Karen vernaculars of Karenni and its neighbourhood. Taungthu, which is practically a dialect of Karen, was spoken by 160,436 persons in 1901. Siamese and Chinese, the two most important non-indigenous tongues of the sub-family, are both spoken in Burma, Siamese (19,531) for the most part in the extreme south, on the Siamese border, and Chinese (47,444) more or less through the whole of the Province by Chinese immigrants.

Mon-Khmer family. Talaing, the speech of the Mons or Peguans, who for many years strove with the Burmans for the mastery in Burma, belongs to the Mon-Khmer or Mon-Anam family, and was returned by 154,483 persons in 1901. Talaing as a spoken language is gradually dying out, its place being taken by Burmese. The remaining languages of the Mon-Khmer family spoken in the Province are the vernaculars of various hill tribes scattered through the Shan States, such as the Was, the Palaungs, the Riangs, and the Danaws. Palaung was the speech of 51,121

persons in 1901. Wa is spoken largely to the east of the Salween, but the majority of its speakers were entirely excluded from the census operations and their number is not even approximately known.

Other languages.

The only two vernaculars of Burma that do not belong to either of the two families are Daingnet, a corrupt form of Bengali spoken in Akyab District near the borders of Chittagong; and Salon (Selung), the speech of the sea-gipsies of the Mergui Archipelago, which has been placed in the Malay language family. The Malayo-Polynesian languages, though related to the Mon-Khmer family, have been separated from that group, because the relationship has not yet been definitely settled.

The proportion borne by the speakers of the chief vernaculars of the Province (namely, Burmese, Shan, Karen, Talaing, Chin, and Kachin) to the population of Burma proper in 1891 and 1901 is indicated in the statement below:—

	1891.	1901.
Chief vernaculars . .	6,685,555	8,079,914
Other languages . .	920,005	1,149,988

The following are the totals of persons returned in 1901 as speakers of the principal non-indigenous languages belonging to language families other than the Indo-Chinese:—

English	18,500
Hindustāni	95,122
Bengali	204,973
Hindī	28,689
Punjābi	15,803
Tamil	99,576
Telugu	96,601

Tribes and races.

Caste is absolutely unknown as an indigenous institution in Burma. It is utterly foreign to the democratic temperament of the people, and an ethnical analysis of the inhabitants of the country must of necessity be based on considerations other than that of caste. In existing conditions, the most satisfactory classification of the indigenous races of Burma is that which proceeds on a linguistic basis. Of the total population in 1901, 6,508,682, or 62 per cent., were Burmans. Of the other Tibeto-Burman peoples the Arakanese of the western coast numbered 405,143, the KADUS of Kathā 34,629, and the Mros of Akyab and Northern Arakan 12,622. The INTHAS, a community found scattered through the Southern Shan States, numbered 50,478, though only 5,851 of them spoke the Intha dialect.

Tibeto-Burman group.

The KACHINS occupy the hills to the extreme north of Upper Burma, and are steadily making their way southwards down the eastern fringe of the Province; 64,405 of them came within the scope of the regular census operations in 1901, and about 50,000 were residents of the estimated tracts, where no regular collection of race statistics was made. The Chins (*see* CHIN HILLS) are the predominant folk along the western border of Burma from the level of Manipur down to Akyab District, and thence southwards along the range of hills that separates the old province of Arakan from the Irrawaddy valley. The Chins proper numbered 179,292 in 1901, and the Kamis of Akyab and Northern Arakan, a closely allied tribe, 24,937. The DANUS (63,549) are a half-bred Shan-Burmese community inhabiting the borderland between Burma and the Shan States; and the Taungyos (16,749) are also borderers, frequenting the same region and talking a language which resembles an archaic form of Burmese. The AKHAS or Kaws, a hill tribe of the trans-Salween Shan States, come probably from the same prehistoric stock as the Burmans, the Kachins, and the Chins; so also, there is reason to believe, do the Lisaws, the Muhsös, the Maingthas, the Szis, the Lashis, and the Marus of the north-eastern hills. The Akhas numbered 26,020 in 1901; the Muhsös, 15,774; the Kwis, a branch of the Muhsös, 2,882; the Lisaws, 1,427. The remaining tribes are for the most part inhabitants of the areas estimated at the Census of 1901, and their strength is but imperfectly known.

The Siamese-Chinese group.

In the Siamese-Chinese group the Shans and Karens are most strongly represented. The total number of Shans in 1901 was 787,087 (exclusive of the Lem, the Hkün, and the Lü of trans-Salween territory, but including the Shan Tayoks of the Chinese border). The Shans (*see* SHAN STATES) are the prevailing nationality in practically the whole of the uplands that lie between the Irrawaddy and the Mekong from the 20th to the 24th parallels of latitude, and form a large proportion of the population in the country that separates the western bank of the Irrawaddy from the Manipur and Assam frontiers. West of the Irrawaddy they have become absorbed to some extent into the Burmese communities that surround them, and nearly the whole of their territory forms part of the regularly administered areas of the Province; but east of the river they have preserved their race characteristics unimpaired, and are administered through the native rulers of the States into which their country is politically divided. The KARENS are the hill tribes of the south-eastern areas of the Province from Toungoo

to Mergui, and are also found scattered over the delta of the Irrawaddy. The greater number of the Karens of Lower Burma are members of one or other of two main tribes, the Sgaw and the Pwo. Towards the north and beyond the limits of Lower Burma, in Karenni and the Southern Shan States, a third tribe, the Bghai, preponderates. In 1901 a total of 86,434 persons returned themselves as Sgaw, and 174,070 as Pwo Karens, the tribe in the case of 457,355 others being not returned. The Bghai were for the most part residents of the estimated areas of Karenni when the Census took place. Within territory treated regularly, 4,936 Red Karens (Bghai) were enumerated. The Bres, the Padaungs, and the Zayeins of Karenni and its neighbourhood have been classed linguistically with the Bghai, though it is possible that further research may show that ethnically they should be placed in some other category. In all, 7,825 Padaungs and 4,440 Zayeins were found in areas within the scope of the regular Census. They were practically all residents of the south-western corner of the Southern Shan States. The TAUNGTHUS, like the Padaungs and the Zayeins, are of doubtful origin. They are found in the hills along the eastern border of Burma from Amherst to Yamethin, and numbered 168,301 in 1901. Their language is to all intents and purposes a form of Karen, and it is probable that there is more Karen than any other element in their composition.

Mon-Anam group.

The TALAINGS are the main representatives of the Mon-Anam group in Burma proper. They are found in their greatest strength in the country round the mouths of the Irrawaddy, the Sittang, and the Salween, which formed the nucleus of the ancient kingdom of Pegu. In 1901 their aggregate was 321,898. Their numbers are diminishing, and they are being gradually absorbed into the Burmese population of the Province. Of the Mon-Anam hill tribes of the Shan States the most numerous according to the census figures of 1901 are the PALAUNGS (56,866), who are found for the most part in the Ruby Mines District and the hills that form the northern border of the Northern Shan States. It is probable that the WAS, whose country lies to the east of the Palaung tract on the farther side of the Salween, are as numerous as the Palaungs; but, as their northern areas were untouched at the time of the Census, nothing is known of their real strength. In the regularly enumerated areas in the trans-Salween Shan States 5,964 persons were returned as Was, 15,660 as Tai Loi, 1,351 as Hsen Hsum, and 1,096 as Pyin. The last three tribes are, it is believed, varieties of the Wa stock. The Riangs or Yins are almost

certainly, and the Danaws probably, of Mon-Anam extraction. The latter, who numbered only 635 in 1901, are almost extinct as a separate tribe. They inhabit the Myelat States to the east of Upper Burma. The Yins number 3,094 at the last Census. Their habitat lies in the north-east of the Southern Shan States.

Physical characteristics. There are no very marked differences in the physical characteristics of the indigenous races of the Province. Like all southern Mongols, their stature is below the average. They are thick-set and for the most part sturdy. Their complexion ranges through various shades of olive-brown, and is darker on the whole than that of the Chinese ; their hair is black and straight and on the face ordinarily very sparse. It is usually left long on the head and in most cases is tied into a top-knot. They are round-headed or brachycephalic, have high cheek-bones and broad noses. Their eyes are small and black but not as markedly oblique as those of the Chinese, and, taken as a whole, they show a greater tendency to approximate to the Caucasian type than do the latter.

Hindus and Musalmāns. Of the Hindu castes the following show the largest totals: Paraiyan, 25,601 ; Māla, 18,522 ; Kāpu, 11,214 ; Palli, 13,250 ; Brāhman, 15,922 ; Chhatrī or Rājput, 13,454. A total of 41,663 males and 7,758 females were returned in the census schedules under the general designation of Sūdra. Among the Musalmān tribes the Shaikhs are numerically the most important in Burma, and their total of 269,042 represents 80 per cent. of the Muhammadan population of the Province. Saiyids and Pathāns numbered respectively 8,970 and 9,224 ; and Zairbadis, the offspring of unions between Burmese women and Musalmān natives of India, 20,423.

Europeans and Chinese. The British in Burma in 1901 numbered 7,450 (5,948 of whom were males and 1,502 females), and the Eurasians 8,884. A total of 1,090 persons were returned as Europeans, no nationality being given. It is probable that the majority of these were, strictly speaking, Eurasians. The Chinese of the Province aggregated 62,486, as against 41,457 in 1891.

Religions. Buddhists. Of the religions of Burma, Buddhism has by far the largest number of professed adherents. In 1901 a total of 9,184,121 persons, or 88.6 per cent. of the population, were returned as Buddhists. The Buddhism of Burma is an amalgam that has resulted from a fusion of the elements of the Northern and the Southern schools of Buddhist thought, introduced from India on the one hand and from Ceylon on the other. This amalgamation was, as already stated, completed at Pagan in the eleventh century. Before that, a corrupt form of Buddhism

prevailed, which appears to have been an admixture of Lamaism and Tantric Buddhism, its professors being called the *Ari* or *Ariya*, the 'noble.' Their robes were dyed with indigo, like those of the Lāmas of Tibet and China, and they wore their hair at least two inches long. They were not strict observers of the vow of celibacy, and the basis of their doctrines was that sin could be expiated by the recitation of certain hymns.

In theory Buddhism is the general religion of the country. In point of fact, though it has done much to soften and humanize the people, it is far too often nothing more than an outward veneer covering the spirit-worship that is everywhere practised openly, one might almost say shamelessly. The Burmese Buddhist Church is split up into two main parties, which are known as the *Sulagandi* and the *Mahagandi*. The members of the former set store by ritual and outward observances; those of the latter are to all intents and purposes fatalists, but the differences between the two parties are largely academic. Sectarian bitterness is practically unknown. There are various minor sects, but none has achieved any marked distinction. The head of the Church in Upper Burma is the *thathanabaing* or archbishop; and in both sections of the Province there is a recognized hierarchy, which comprises dignitaries known as *gaingoks* (bishops) and *gaingdauks*, as well as the ordinary *pongyis* or monks. The religion of the people finds an outward and visible sign in the pagodas and monasteries that are prominent features of nearly every village. The Burmese pagoda is bell-shaped, built of brick and usually whitewashed, though many shrines are partially, and a few wholly, gilded. Timber is the material ordinarily used for the *kyaungs* or monasteries that the pious have erected in thousands through the length and breadth of the Province, and enormous sums are frequently lavished on these and other works of merit. The monasteries are the indigenous schools of Burma, at which the village boys all learn to read and write. It is not only as scholars, moreover, that the people have had experience of their *kyaungs*. Practically every male Burman assumes the yellow robe of a monk for a shorter or longer period as the case may be, and monasticism thus plays a part in the life of the inhabitants of the country that is absolutely unique.

Next to the Buddhists in point of numbers come the spirit-worshippers or Animists, the majority of whom inhabit the Hill Tracts. Their aggregate in 1901 was 399,390. This figure does not, however, adequately represent the strength of Animism in Burma, for it does not include the residents of **Animists.**

the estimated areas where no religion data were collected at the enumeration. The population of these areas amounted to 127,011; and, as there is good reason to believe that it was made up very largely of spirit-worshippers, the actual strength of the Animists may be fixed at something approaching half a million.

Muhammadans, Hindus, and others.

Islām was represented at the latest Census by 339,446 persons, and Hinduism by 285,484. After these, but separated from them by a considerable numerical gap, come Christians with a total of 147,525, of whom 129,191 were natives, while the adherents of the other religions, most of whom were Sikhs, totalled only 7,647. The largest proportional increase during the decade 1891–1901 is among the Animists, who at the close of this period were shown as more than twice as numerous as at its beginning; but this is due solely to the fact that the Census of 1901 dealt with a quantity of backward hill areas inhabited by spirit-worshipping tribes who were untouched in 1891. A comparison of the totals in each year for Burma proper gives a better idea of the relative growth of the main religions. On this basis we find that during the period in question Hindus have increased at the rate of 63 per cent., Animists at 41, Musalmāns at 33, Christians at 21, and Buddhists at 19 per cent. The last figure may be looked upon as indicating roughly the natural rate of increase in the Province, the conversions from Buddhism to Christianity and Islām being counterbalanced by accessions from the ranks of the spirit-worshippers. In the case of the Hindus and the Musalmāns, immigration from outside the Province accounts for the high rate of increase.

In Lower Burma, where data extending over more than twenty years are available, we find that in 1881–91 the Buddhists increased by 24 per cent., but during the following ten years by only 19 per cent. This apparent diminution in the rate of growth is probably due to the return to their homes in Upper Burma of villagers whom the disturbances that succeeded the seizure of Mandalay had driven temporarily into Lower Burma. Among Musalmāns and Hindus, on the other hand, the rate of growth during the first half of the twenty years in question was by no means as conspicuous as during the second.

Christians.

The Christian population of Lower Burma rose between 1881 and 1891 by 33 per cent., and between 1891 and 1901 by 19 per cent. The strength of this population is, however, largely affected by the movements of British troops, and it is probable that the falling off in the rate of increase during the

second decade is not really as marked as it would appear to be. The principal Christian denominations returned in 1901 were Baptists (66,860), Roman Catholics (37,105), and Anglicans (22,307). In Burma proper the Anglicans increased by 76 per cent. between 1891 and 1901 and the Roman Catholics by 48 per cent. The Baptists show a falling off of 18 per cent. for the same period, but this diminution is in all probability due to the fact that a large number of Baptist native Christians did not return their sect at the Census.

Burma forms an Anglican diocese under the administration of the Bishop of Rangoon. The diocese was created in 1877, and then included Lower Burma only. In 1888 new letters patent were granted extending it to Upper Burma. The Bishop is assisted by an archdeacon and nine other chaplains of the Bengal (Rangoon) Ecclesiastical establishment.

Christian missions.

The Anglican missions in Burma are worked through the agency of the Society for the Propagation of the Gospel. The missionary staff consisted in 1903 of eight British clergy and ninety-five catechists and sub-deacons. The Society labours among the Burmese, the Tamils, and the Karens, its principal stations being Rangoon, Kemmendine, Moulmein, Mandalay, Shwebo, and Toungoo.

From 1721 to 1866 the Roman Catholic Church in Burma was represented by a single mission, known as the Vicariate Apostolic of Ava and Pegu. Subsequently the Province was divided into three distinct missions, one for southern, one for northern, and one for eastern Burma, each in charge of a Bishop; and in 1879 the Arakan administrative division was transferred to what is now the diocese of Dacca.

The establishment of the American Baptist Mission dates from the year 1813, when Messrs. Judson and Rice started mission work in Rangoon; but difficulties encountered after 1824 forced the missionaries to transfer their main sphere of action to the British territories of Arakan and Tenasserim. The Tavoy mission was opened in 1825, and a commencement was there made of that widespread evangelization of the Karens which has for so long been associated with the name of the mission in Burma. The Kyaukpyu mission was founded in 1831, the Moulmein mission in 1827, and after the second Burmese War work was renewed in Rangoon, and started in Toungoo, Henzada, and Bassein. The teaching of the Kachins had been commenced in Bhamo in 1877, several years before the annexation of Upper Burma, and after Thībaw's deportation mission stations were established in other Districts of the

newly acquired province. Within the last few years the mission has extended its operations into the Shan States, the Chin Hills, and Karenni. Its work lies mainly among the Karens, with whom the greatest measure of success has so far been obtained; but the missionaries labour among the Burmese also, and the Shans, the Chins, and the Kachins have received attention. According to the latest official returns of the mission, there are twenty-nine stations in the Province. The mission has been eminently useful from an administrative point of view, for it has been one of the main instruments in bringing a knowledge of the languages of the country within the reach of foreign residents. Judson's Burmese Dictionary has long been a household word in Burma; and what was done for Burmese by that early pioneer has been, and is being, accomplished by his successors for other Provincial vernaculars.

The following are the totals for the principal religions returned in Burma proper in 1891 and 1901:—

		1891.	1901.
Hindus		171,577	279,975
Musalmāns		253,031	337,083
Buddhists		6,888,075	8,223,071
Animists		168,449	237,508
Christians	Natives	101,303	127,523
	Others	19,465	18,203
Others		3,660	6,539

Occupations.

The great majority of the people of Burma are agriculturists. In 1901, 5,739,523 persons were returned under the head of agricultural labourers. This figure, in common with all the occupation totals given in this paragraph, includes both actual workers and the persons dependent on them. In addition to the agricultural labourers, 717,753 persons appeared under the category of landholders and tenants. The growers of special products numbered in all 385,528; and the sum of persons directly supported by the produce of the soil may thus be taken at 6,842,804, or slightly more than 66 per cent. of the total population. This figure represents the greater part, but by no means the whole, of the agricultural interests of the country, for a certain section of the rural community combine cultivation with other non-agricultural pursuits. An attempt was made at the last Census to obtain data regarding the persons by whom agriculture was thus pursued as a subsidiary occupation, and the total of these partial agriculturists was found to be 47,524. It is possible that this figure does not give an accurate picture

of the extent to which agriculture is carried on as an additional source of income among the non-agricultural folk, but it seems clear that the proportion of the population liable to be directly affected by general scarcity of crops is not likely to exceed appreciably the 66 per cent. mentioned above. Taking the figures for pasture with those for agriculture, the ratio on the Provincial aggregate is 67 per cent. Under pasture, cattle-breeders (25,508) and herdsmen (46,463) afford the most conspicuous totals.

The artisan section of the community forms roughly 18·5 per cent. of the total population of the Province. The figure on which this ratio is calculated (1,923,084) represents the total of persons shown in the census returns as engaged in the preparation and supply of material substances. Strictly speaking, this comprises certain occupations that involve no real technical knowledge, but for the purposes of general presentation the classification is probably exact enough. In the artisan classes the following occupation totals may be cited: fishermen and fish-curers, 126,651; turners and lacquerers, 14,274; silk-weavers, 34,029; cotton-weavers, 189,718; tailors, 57,915; goldsmiths, 42,112; iron-workers, 26,221; potters, 19,667; carpenters, 69,886; and mat-makers, 53,585. The commercial classes numbered 449,955, or 4·34 per cent., and the professional 264,047, or 2·54 per cent., of the Provincial aggregate. More than one-third of those engaged in commerce come under the unspecified head of shopkeepers; while the most important of the professional occupations, from a numerical point of view, is that of the religious mendicant (138,329), a term which includes, besides *pongyis* or Buddhist priests, probationers for the priesthood and other occupants of monasteries. Medicine was the means of support of 43,252 rural practitioners and their families, teaching maintained 12,178 actual workers and dependents, and the number of persons of all kinds dependent upon the legal profession totalled 7,507. Altogether 392,654 inhabitants of the Province came into the category of general labourers or coolies. This occupation constituted the greater part of those classed under the head of unskilled non-agricultural labourers, which formed 4·2 per cent. of the total population. Government service provided occupation for 191,796 persons, or for 1·85 per cent. of the Provincial total, the largest individual figure being shown by village headmen, who, with their dependents, reached a total of 62,335. The number of those engaged in personal or domestic service was 104,252; and those whose means of subsistence were

independent of occupation, such as pensioners, convicts, and the like, numbered 41,522.

Food. Rice forms the basis of all the Burman's meals, and is eked out with condiments according to his means. There are no caste restrictions as to food ; and, when it is available, the Burman has no hesitation in eating any form of animal and vegetable nutriment that a European would consume. He affects, besides, certain dainties that are repugnant to Western culinary notions, but is on the whole by no means a dirty feeder. This cannot be said of the Karen, who is partial to vermin, and to whom scarcely any kind of animal food comes amiss. Dogs are considered a delicacy by the Akhas, the Was, the black Marus, and other hill tribes in the east of the Province; but Burmans will not touch them. Onions and chillies figure largely in indigenous recipes ; but the most distinctive condiment is *ngapi* or salt-fish paste, a compound which, though exceedingly offensive to the untutored nostril, has achieved a widespread popularity throughout the Province and appears at nearly every repast. On the whole, however, the Burmese villager's daily meal, though possibly not as frugal as that of many Indian peasants, is exceedingly simple.

Dress. The male Burman's dress consists of a jacket, ordinarily white, a cotton or silk waistcloth (*paso* or *longyi*), and a silk headkerchief (*gaungbaung*). Women wear a jacket resembling the men's, and a petticoat or skirt of silk or cotton. The original Burmese petticoat (*tamein*) was open down the front and showed a considerable portion of one of the legs when the wearer walked. It is still largely worn, though the closed *longyi*, a trifle longer in the women's than in the men's dress, is rapidly displacing it in the urban areas of the Province. Nothing is worn on the head by Burmese women, but among the Shans the fair sex cover the head with a cotton head-cloth. In place of the headkerchief that forms a portion of the male attire, the Burmese woman, when dressed in her best, drapes her silk cloth over her shoulders as a scarf. The scarf is, however, not a portion of her everyday attire. On ordinary occasions it is dispensed with, and the jacket is also frequently discarded by both sexes while the household or other work is being done. When it forms her only garment, the woman's skirt is wrapped round her body from close under her armpits to her knees. While engaged in manual labour the man ordinarily tucks up his waistcloth in such a way as to allow absolute freedom for the lower limbs. It is on these occasions that a full sight can be had of the tattooing with which the male

Burman decorates the middle portion of his body from the waist to the knee. Where the wearers can afford it, jewellery is much affected by the fair sex. It is mostly gold, and takes the form of bangles, necklaces, rings, ear ornaments, and, in the case of children, anklets. The main dress characteristics of the chief non-Burman hill tribes are detailed in the tribal articles.

Dwellings. The ordinary village residence is a hut raised on piles some little distance off the ground, built of jungle-wood, timber, and bamboo-matting, and roofed with thatch or split bamboo (*wagat*). The better-class houses have plank walling and flooring, and corrugated iron is gradually obtaining a prominent place in the domestic architecture of the country; but no real use has yet been made by the Burmans themselves of brick as a material for house-building. The empty space below the house is frequently used as a cattle-pen. The style of building varies little throughout the country. The Kachins and other hill tribes are in the habit of building barrack-like houses, in which several families live together; but the general rule is for one or at most two families to occupy the same building. Whether they are erected in the hills or the plains, the materials of which the houses are put together are uniform. Bamboo supplies the greater part of the framework, except in the dry zone, where bamboos are scarce and hovels are constructed almost wholly of palm leaves. **Disposal of dead.** The Burmans dispose of their lay dead by burial. The bodies of monks are burned with more or less ceremony. Burial-grounds are ordinarily situated to the west of the village.

Amusements. *Pwe* is the term applied in Burma to nearly every form of entertainment, whether dramatic or otherwise. The *zat pwe* is performed by living actors; it represents episodes in the life of one or other of the incarnations of Buddha, and the dialogue is helped out with much singing, dancing, and buffoonery. Similar plays are enacted by means of marionettes (*yokthe*), whose manipulation is exceedingly effective and involves considerable skill. Performances of this nature are given by professionals; but *pwes* of other kinds are frequently organized by amateurs, the best-known form being probably the *yein pwe* or 'posture dance,' in which as a rule a number of girls take part. **Pastimes.** Pony, boat, and bullock-cart racing are popular pastimes, and cock-fighting is indulged in freely. One of the most striking of the indigenous games is that known as *chinlon*, which consists in keeping a light ball of plaited cane in the air for as long a time as possible by

successive blows from the feet, knees, or almost any other portion of the body but the hand. The players stand in a circle and kick the ball from one to the other, and adepts are able to keep it in motion for a surprisingly long time without letting it touch the ground. Among other amusements may be mentioned kite-flying, and games resembling chess, backgammon, and marbles, the last, known as *gonnyinto*, being played with the large flat brown seeds of the *Entada Pursaetha*. Gambling is a national weakness which it has been found necessary to keep within bounds by special legislation. Boat, pony, and other races are invariably the occasion for heavy betting. There are numerous games of chance, of which one of the best known is the 'thirty-six animal' game. The Burmans are inveterate smokers. Both sexes indulge freely in tobacco and commence smoking at a comparatively early age, but the cigars that they ordinarily affect have the merit of extreme mildness and contain as a rule a great deal that is not pure tobacco. The outer covering is ordinarily of maize husks or *thanat* leaves. The strong black Burma cheroot of the European market is but little favoured by the natives.

Festivals. The two principal festivals of the Burmans are the New Year, which occurs in April, and the end of the Buddhist Lent, which takes place in October. The former celebrates the annual descent to earth of the Thagya Min, the king of the Nat or spirit kingdom, and is often known as the 'water festival,' as the most prominent feature of the merrymaking consists of what may be entitled a battle of squirts which leaves the revellers drenched to the skin. The autumn season of rejoicing might appropriately be termed the 'fire festival,' for the most striking of its ceremonies is the general illumination that takes place, the sending up of fire balloons, and the floating of diminutive lamps down the streams and rivers.

The full moon of the month of Tabaung (roughly speaking, March) is made the occasion for pagoda festivals and other gatherings. The commencement of the Buddhist Lent in July has its less exuberant ceremonies; and the Tazaungmon festival, between the end of Lent and the close of the calendar year, is marked by rejoicings in certain parts of the country. All these are treated as public holidays, and all are observed more or less by the non-Burman Buddhist peoples of the country, such as the Shans, the Taungthus, and the Palaungs, as well as by the Burmans.

Names and titles. The ordinary Burmese title is *Maung* ('Mr.') for males and *Ma* ('Mrs. or Miss') for females. To these are added one

or more names usually indicative of some object, animate or inanimate, or of some quality. Children are named at birth, and convention usually requires that the initial letter of each child's name should be that appropriate to the day of the week on which he or she was born. Thus, for example, the gutturals (*k*, *g*, *ng*, &c.) belong to Monday, the palatals (*s*, *z*, &c.) to Tuesday, the labials to Thursday, and the dentals to Saturday. Hence a boy born on a Monday might suitably be called Maung Gale (*gale* = 'small'). *Nga* and *Mi* are less respectful substitutes for *Maung* and *Ma*. They are used for children, inferiors, and the like. With advancing years the honorific *U* is often applied to a man in place of *Maung*, especially if he is a senior of substance and position; and *Kyaungtagā*, with its feminine *Kyaungamā*, is a title earned by a person who has gained merit by the construction of a *kyaung* or monastery. A Pālī title takes the place of the ordinary lay name on the assumption of the yellow robe and admission into a monastery. Family names are unknown except among the Kachins, and there is no change in the woman's name at marriage. *Shwe* ('gold' or 'golden') occurs frequently in Burmese names, and figures largely in the nomenclature of towns, villages, rivers, hills, &c. Occasionally it indicates the presence of old gold-workings (*Shwedwin*, 'gold-mine'; *Shwegyin*, 'gold-sifting'); but more ordinarily it is purely honorific (*Shwedaung*, 'golden hill'; *Shwelaung*, 'golden boat'). *Myo* ('town'), *ywa* ('village'), *taung* ('hill'), *myit* ('river'), *chaung* ('stream') form the component part of a large proportion of Burmese place-names, their counterparts in Shan being words like *möng* ('state'), *nam* ('water' or 'river'), *loi* ('hill'), *nawng* ('lake'), and the like.

Agriculture. Nature of cultivation.

Agriculture affords the main means of support to over 66 per cent. of the population of Burma, and is the subsidiary occupation of a further portion of the community. Cultivation is regulated more by rainfall than by the conformation of the surface of the soil. Rice is grown wherever there is sufficient moisture and land in any way adapted to its cultivation. In the dry zone of Upper Burma, sesamum, maize, *jowār*, cotton, beans, wheat, and gram largely take the place of rice; but these alternative products have been practically forced upon the Upper Burma cultivator by climatic conditions, for it is an almost universal rule that where rice of any kind can be cultivated, it is raised to the exclusion of other and apparently more appropriate 'dry' crops. Throughout Lower Burma the rainfall is ample for rice cultivation, and little else but rice

is produced there, and the same may be said of a substantial portion of the wet division of Upper Burma. Rice cultivation in Burma is of two main classes: namely, *le* ('lowland') and *taungya* ('hill-slope'). The *ya* crops, such as sesamum, cotton, and *jowār*, cover the rolling uplands of the dry Districts of Upper Burma and so much of the plain as cannot be brought under rice cultivation. Wheat and gram are grown in the better kinds of lowland soil; and beans and maize, with a host of other minor crops of the class ordinarily known as *kainggyun*, are harvested in the rich alluvial soil left behind as the waters of the rivers recede from their flood limits during the dry season.

Principal crops. Rice.

Rice is the staple food-grain of the Province. To eat a meal of any kind is, in Burmese, to 'eat rice' (*tamin sa*). There are numerous varieties of rice, distinguishable from each other by colour, texture, consistency when cooked, and the like; but their names are largely local and, from an agricultural point of view, their differences are not of special importance. A more suitable classification, after that which separates the plain from the upland rice, is by harvests or seasons. There are three main harvest classes: *kaukkyi*, the big or late rain rice, which is sown in nurseries (*pyogin*) at the beginning of the monsoon, transplanted during the rains, and reaped during the cold season; *kaukyin*, the quick-growing or early rain rice, which is sown in May–June and gathered during the height of the rains; and *mayin*, or dry-season rice, which is sown during the cold season on the edges of meres or other inundated depressions from which the water is receding, and is garnered about the commencement of the rains. Other harvest classes are known as *kauklat* and *kaukti*. Of these, the *kaukkyi* provides the bulk of the rice of Burma. Very little else is cultivated in the Lower province, and it is practically this crop alone that is exported. It is longer in the stalk than the other kinds and takes longer to mature. In Upper Burma the climate does not always lend itself to *kaukkyi* cultivation, and recourse has to be had there to the inferior varieties. *Taungya*, or hill rice, is sown, as soon as the rains set in, on hill slopes which have been cleared and fired during the hot season. The seed is not transplanted from nurseries, as is usual in the case of *le* rice, but is scattered broadcast or dibbled in the ash-impregnated soil, and the crop is reaped towards the close of the rains. The system of cultivation adopted is to the last degree wasteful, for the soil is soon exhausted and constant moves have to be made by the *taungya*-cutter to new and uncleared hill-sides.

There is nothing particularly attractive in the paddy-fields of Burma. A stretch of typical delta rice country in the early rains is a dingy expanse of mud and water, studded with squat hamlets, and cut up by low earth ridges into a multitude of irregular polygons through which mire-bespattered plough bullocks wade. Later on, with the transplanting, the plain grows green; and, as the young plants accustom themselves to their surroundings, this hue becomes more pronounced, till the cold season draws near and the expanse takes on a tinge of yellow that recalls the approach of the wheat harvest of England; but here there are no undulations to break the dull uniformity of the outlook, no trim hedges, no variety of crops. All is one dead level away to the horizon. It is very little more picturesque in the uplands. Among the hills the *taungya* patches are conspicuous; but unsightly blackened tree-stumps stand up out of the grain, and there is an air of desolation and unkemptness about the clearings that nothing in the way of colouring or surroundings can redeem.

Jowār or millet (*Sorgham vulgare*) is the main subsidiary food-crop in the dry zone of Upper Burma. In some of the arid upland tracts this grain takes the place of rice as the ordinary food of the household; but ordinarily it is not regularly eaten, and is often grown simply as fodder for cattle. There are two main varieties of millet: the *kunpyaung* which has a husk, and the *sanpyaung* which has none. The plant, which is not unlike maize, grows to 8 or 10 feet in height. It is sown on all descriptions of *ya* land in July and August, and is cut towards the end of the cold season. There was a large export of *jowār* to India during the recent famine years. *Jowār.*

Sesamum (*hnan*) is for the most part, like millet, essentially a dry area crop. There are two distinct sesamum harvests, that of the early sesamum or *hnanyin* and that of the late sesamum or *hnangyi*, the former being more generally grown. The latter is sown towards the close of the rainy season and reaped during the cold season, while the *hnanyin* is gathered during the rains. The plants, when mature, range in height from 2 to 5 feet and bear white flowers. Sesamum is cultivated for the sake of the seed, which yields an oil much affected by the Burman in cooking. Oil-presses on the pestle-and-mortar principle, usually worked by bullocks, are common in the majority of the villages where sesamum is grown. Sesamum.

Of the *kaing* or riverain crops none is more conspicuous than maize (*pyaungbu*), which carries glossy green foliage and Maize.

rises to a considerable height, either alone or in conjunction with a form of climbing pulse, the growth of which its stalks materially assist. The maize cob is largely eaten green, as a delicacy, and the husk or sheath when dried is used for the outer covering of Burmese cheroots. Its stalks, like those of the *jowār*, are excellent fodder for cattle. It is sown as the water falls and is cut during the dry season.

Pulse. Of peas and beans, which are also the product of river land inundated during the rains, there are numerous varieties, of which some of the best known are *pegyi*, *pegya*, *matpe*, and *sadawpe*. The sowing of this form of *kaing* crop takes place in October, and the harvest is gathered just before the hot season begins. There is a considerable export of *pegya* (*Phaseolus lunatus*) to Europe for cattle fodder.

Cotton. Cotton is grown systematically only in certain special tracts of the dry zone. It is sown on high land, as a rule, early in May, and picking commences about October and is continued at intervals till the end of the year. In Thayetmyo District picking appears to be continued up to a later date than in Upper Burma. The cotton is short-stapled as a rule. It is cleaned locally, either by hand or in cotton-ginning mills, and sent to both China and India.

Tobacco. Tobacco is ordinarily sown in nurseries on inundated alluvial land in September and October, and is planted out in December. The crop is one that needs careful attention; and weeding, pruning, and hoeing are constantly necessary. In March and April the leaf is ready for picking. It is then plucked, roughly pressed, and dried in the sun, but no regular curing operations are undertaken. The stalks are used for smoking as well as the leaves. It is grown solely for local consumption.

Gram and wheat. A level black soil known as *sane* is the best soil for gram and wheat. Both crops are grown on alluvial land, and are sown at the close of the rainy season and harvested at the beginning of the hot season. Wheat, which in Burma is of the bearded kind, is grown only in a few limited tracts in the dry zone; the cultivation of gram is more widespread.

Toddy-palms. Throughout the dry zone the toddy-palm (*Borassus flabellifer*) is a feature of the landscape, and the tapping of this useful tree affords employment to a large proportion of the residents of the Districts in which it grows. Tapping commences in February and continues till July. The juice when extracted is either fermented and made into *tāri*, or is boiled down into molasses or jaggery (*tanyet*). The leaves are used in the dry zone for thatching purposes.

Among the other products of the country may be mentioned chillies, pumpkins and gourds, betel-vines and the areca-nut, sugar-cane, and onions. Plantains are successfully cultivated on a small scale in nearly every village, and on a larger scale in specially suitable tracts; mango-trees abound, though, except in the neighbourhood of Mandalay, the fruit is not as a rule of any exceptional quality. Prome has long been famous for its custard-apples, and the southern portion of the Tenasserim Division has achieved a local notoriety for its mangosteens and durians. Pine-apples are common, and are cultivated in enormous quantities in the immediate neighbourhood of Rangoon. Oranges of good quality are grown in Amherst, in the Shan States, and in Toungoo. Tea-growing is systematically practised in the Shan States by the Palaungs; but the industry has never been able to attract European capital, and is still conducted on purely native lines. Coffee has, on the other hand, been worked on the Ceylon and Indian systems, and was very successful in Toungoo District till it was attacked by leaf disease. Opium is grown freely in portions of the Shan States, but the drug is extracted almost solely for home consumption. There is no regular cultivation of fibres on a large scale, though the forests of the Province abound in *shaw* and other fibrous products. *San*-hemp is, however, grown to a considerable extent in Tavoy. Other crops.

The average yield in cwt. per acre of the principal crops of Burma is as follows:— Average yield of crops.

Crop.	Average yield in cwt.
Lower Burma rice (unirrigated) . .	11
Upper Burma rice (irrigated) . .	11
Upper Burma rice (unirrigated) . .	9
Upper Burma wheat	5
Upper Burma *jowār*	4
Upper Burma gram	5
Upper Burma sesamum . . .	2
Upper Burma cotton	80 lb.

Ploughs and harrows are used for breaking up the soil and preparing it for the reception of seed. Ploughs (*te*) are either of wood, or of wood and iron, chiefly the latter; harrows (*tundon*) are almost invariably of wood only. The latter consist of a single pole or bar with teeth of cutch or *padauk* wood fixed at intervals along its length. They are heavy and cumbrous, and receive the additional weight of a man who stands upon the implement in its progress across the soil. Agricultural implements.

A primitive kind of roller or clod-crusher (*kyandon*) is used in Upper Burma and in portions of the Lower province, where it is known as *setdon*. Various forms of knives and sickles are used for reaping, weeding, and the like. They are all straight or slightly curved; the sickle of English husbandry with a semi-circular blade has not yet found general favour. Hoes and mattocks are employed extensively for agricultural purposes, the purest indigenous form being the *tuywin*, a spud-like implement with a straight shaft and a small slightly concave blade, of little use except for digging holes and grubbing up weeds. Threshing is not as a rule done by hand. The grain is trodden out by cattle; winnowing is carried out with the aid of trays of woven bamboo; and paddy is ordinarily husked in wooden mortars, the pestle consisting of a block of wood at the end of a heavy bar working on a lever, which is raised and lowered by the weight of the operator's body as he steps on and off the farther end of the bar. The Burman's conservative tendencies are nowhere more apparent than in his dealings with the soil, and the introduction into the country of novel agricultural appliances is slow. The greater proportion of the cultivator's implements are still eminently primitive, and are not likely to alter materially in character for some time to come.

Use of manure.

Cow-dung is used to a certain extent for manure in some Districts, but the labour involved in carrying the manure from the cattle-pens to the fields appears to be an insuperable obstacle in the way of manuring on a methodical and uniform system. As a rule the nurseries receive most attention when any manuring is done. The only other measure taken to fertilize the paddy-fields is to burn the stubble during the dry season and to leave the ash to enrich the soil.

Rotation of crops.

In Lower Burma, where there is only one main crop of importance and the soil is extraordinarily fertile, the question of rotation of crops is not one which concerns the agriculturist to any appreciable extent. In Upper Burma, on the other hand, and especially in the dry zone, experience has taught the husbandman that there is a limit to the recuperative power of much of the non-inundated land; that some crops exhaust the soil more than others; and that regard must be paid to this fact in cropping the poorer classes of fields. Sesamum, for instance, absorbs an exceptional quantity of nourishment from the earth, and is not generally grown in two successive years on the same land. In some cases two fallow years are allowed after a sesamum year, in some more. Occasionally *jowār* or cotton or both take their turn before the fallow period com-

mences. In better kinds of soil sesamum and *jowār* are cropped in alternate years. In the *sane* (black soil) tracts wheat and gram alternate to a certain extent, and millet often succeeds cotton before a fallow. As a rule, however, even where conditions demand an economical system of rotation, the order of tillage observed is more or less haphazard and the most is not made of the properties that the earth possesses.

Average area of holding. The average area of a holding differs very greatly from District to District and tract to tract. The mean for Meiktila District is 7·7, that for Sagaing rather over 12 acres. In Pegu, in 1900, the average area of rice-land holdings was 26 acres, or more than double the Sagaing average. In certain localities, as, for instance, in Prome and Kyaukpyu, it is even lower than in Meiktila; and looking at the Province as a whole, and having regard to the numerical strength of the agricultural community and the area under cultivation, it would probably be safe to say that the general average falls somewhere between 10 and 15 acres.

Increase of cultivation. The total area under crop in 1903–4 amounted to 19,680 square miles, being 50 per cent. larger than that cropped ten years earlier. A portion of this increase must be attributed to more accurate surveys, but even so the growth is still substantial. In Lower Burma extension of cultivation was large in 1892–3; in 1893–4 it was less marked; while cattle-disease, and low prices induced by a paddy ring, sent the area cropped in 1894–5 down to more than 235 square miles below the previous year's figures. Since these years of depression, however, prices have ruled high, and the growth of cultivation in the Lower province has been calculated at the rate of 375 square miles per annum. In Upper Burma there has been a steady rise in the area under cultivation since the early post-annexation days, with only temporary decreases, owing to deficient rainfall, in 1895–6 and 1901–2.

The area under rice in 1903–4 was 14,540 square miles. Rice now covers over two-thirds of the cropped area in the whole of Burma, and in Lower Burma it forms more than eleven-twelfths of the total. Thus the history of the increase or decrease of cultivation generally is in Burma to all intents and purposes a history of the growth or shrinkage of the cultivation of rice. *Jowār*, gram, sesamum, sugar-cane, cotton, and tobacco all show increases. Maize, on the other hand, would seem to be declining in popularity. *Jowār* showed a total of 1,633 square miles in 1903–4, representing an increase of 78 per cent. since 1894. In the case of sesamum the ten

years in question have seen a growth of no less than 128 per cent. in the cropped area. On the whole, recent years have been favourable to the crops in both sections of the Province, and have enabled the cultivators to extend their holdings and clear available waste ground; while scarcity in India has afforded a ready market for agricultural produce, notably food-grains.

Improvements in quality by selection of seed.

The advantages of improvements in quality by a careful selection of seed have not been wholly lost sight of in the Province; but where high prices are obtainable in the market for produce of almost any class, quantity rather than quality is the improvident husbandman's first and often his only thought. The Settlement officer of Prome wrote in his *Revision Settlement Report* (season 1900–1):—

'As a rule the seed paddy is merely taken from the store of *wunsa*, but in one *kwin* near Shwedaung a holding in an unpromising situation was found to be giving an unusually heavy crop, which the cultivators explained was due to the use of specially selected hand-picked seed grain. It is possible that this is not a solitary case, but no other happened to come to light.'

It is to be feared, however, that forethought such as this is likely to be the exception with the Burman for many years to come.

Influence of Agricultural department.

The Agricultural department is doing its best to turn the indigenous cultivator from his attitude of passive distrust towards untried agricultural methods and new products. Ground-nuts, tobacco (Havana and Virginia seed), wheat, Egyptian cotton, and potatoes are crops the introduction of which it is sedulously fostering; but so far, except perhaps in the case of potatoes in the Shan States and ground-nuts in Magwe, the result of the experimental cultivation has not been altogether encouraging, for the operations are too often conducted half-heartedly by the villagers concerned. In time, some of the new products will no doubt gain a footing in the country. Agricultural shows are held annually throughout the Province at suitable centres. They are popular, but their usefulness, like that of experimental cultivation, has yet to be appraised at its full worth by the people. There are no model farms, but experimental gardens are maintained by Government at Taunggyi, Falam, Myitkyinā, Kathā, Simā, and Sinlumkabā in the Upper province. The position of private tenants is, generally speaking, good; but measures are needed to improve their condition and to relieve them from indebtedness, and

a Tenancy Bill, framed to secure these objects, is at present under consideration. Steps have been taken in Upper Burma to prevent the leasing of state land to persons other than bona fide agriculturists.

Agricultural loans.

Small use is made of the Land Improvement Loans Act, 1883, in Burma, but loans under the Agriculturists' Loans Act, 1884, are common. During the years 1890–1900 the total of advances made under the latter enactment averaged about Rs. 41,000 per annum in Lower, and 2,13,000 in Upper Burma. Advances are made by Government, through the local officers, to deserving villagers on the security of the village headman or of fellow villagers. The rate of interest demanded is 5 per cent. per annum, having been reduced to this figure from $6\frac{1}{4}$ per cent. in 1897–8, but a proposal to raise it again is under consideration. The present rate is far below the lowest interest that cultivators would have to pay on money borrowed from private individuals. The period for repayment is ordinarily two or three years. Money-lenders in Burma are sometimes recruited from the agricultural community itself. They are ordinarily either Chettis from Madras, whose rate is from $1\frac{3}{4}$ to 5 per cent. a month, or Burmans, whose demand is at times even more exorbitant. Thus in some Districts the Government loans are eagerly sought after, though in others the formalities that have to be gone through before the cash reaches the cultivator's hands and the rigid rules under which recoveries are effected often deter would-be applicants from availing themselves of the loan rules. The popularity or otherwise of the advances depends to a large extent on the efforts made by the local officers to commend them to the agricultural community. Recoveries are made without great difficulty; and though occasionally it is found that applications have been made for other than bona fide agricultural purposes, this is the exception and not the rule. The total of irrecoverable sums is small. Steps have recently been taken to introduce the system of co-operative credit among the agriculturists of the Province. Under the provisions of the Co-operative Credit Societies Act (X of 1904) the people have been encouraged to start small societies, the members of which (usually from 30 to 50 in number) join together and subscribe a capital. Sums ranging from Rs. 1,000 to Rs. 4,000 are thus obtained, and to this Government adds a loan of a similar amount free of interest for the first three years and afterwards at 4 per cent. The combined amount is lent out among the members of the society at 1 per cent. a month, and the profits go first to the

formation of a reserve fund. When this has been built up, they will be devoted to bonuses to members. During the first four months of 1905 eight rural societies (four in Upper and four in Lower Burma) were established; and at the end of May of that year they numbered 404 members, who had subscribed a capital of Rs. 12,160, to which Government had added Rs. 11,560 in the shape of a loan. The movement is at present in its infancy, but the progress so far has been encouraging.

Breeds of cattle.

Burmese cattle are of a type peculiar to Burma and other portions of Indo-China. Small, but sturdy and well set up, they are exceedingly docile and for their size possess considerable powers of endurance. Their hump and dewlap are less developed than in Indian beasts, and their horns are comparatively small. They are bred by the Burmese almost solely for draught purposes, and by the Shans for caravan traffic, not professedly for food nor ordinarily for dairy purposes, for the tenets of Buddhism proscribe the taking of life, and the use of milk and butter is only beginning to be recognized by the people of the country, in whose eyes to rob the calf of its natural food used to be almost as reprehensible an act as to eat its mother's flesh. Religious scruples in this regard are being gradually broken down; but the Burman's faith has left an indelible impression on the treatment of his cattle, which, except perhaps in Arakan, are infinitely better cared for than the sacred drudge of the average Hindu ryot. In some Districts a light-built breed of bullocks is used for cart-racing. Cattle are ordinarily driven out to graze early in the day and return to the villages at nightfall. Some of the animals are housed under the dwellings of the villagers amid the piles on which the building is erected, others are tethered in a shed close by the house. The diseases to which the cattle of the Province are most liable are rinderpest (*kyaukpauk*), foot-and-mouth disease (*shana kwana*), anthrax (*daungthan* or *gyeikna*), dysentery (*thwe thun wun kya*), and tuberculosis (*gyeik*). Of these the first claims by far the largest number of victims. Cattle-disease is kept under as far as possible by a staff of veterinary assistants whose duty it is to visit affected areas. Segregation is enforced. Outbreaks of infectious disease have to be reported to the civil authorities, and in Lower Burma all deaths of cattle are recorded and the death returns are collected by the police. In Rangoon full use is made of the provisions of the Glanders and Farcy Act of 1879. The price of cattle varies considerably. An ordinary pair of working bullocks may be purchased for

sums varying from Rs. 120 to Rs. 150, but well-matched and powerful beasts will often fetch as much as Rs. 150 each. The price of cows ranges from Rs. 30 to Rs. 60. Buffaloes are used for ploughing and other draught-work, more so in the wet than in the dry Districts of the Province. For heavy and laborious work they are excellent and cost little to keep, for they subsist for the most part on what they find on the grazing-grounds. An ordinary pair of buffaloes may be purchased for from Rs. 150 to Rs. 200, though more is demanded for an exceptionally good pair.

The Burmese pony is small, its height ranging from 11 to 13 hands. It is very hardy and active, but hard-mouthed and often of uncertain temper. The so-called Pegu pony is well known in India, but Major Evans, A.V.D., Superintendent of the Civil Veterinary department of Burma, throws doubt upon the theory that there was a separate Pegu breed. He wrote as follows in the *Annual Report* of the Provincial Civil Veterinary department for the year 1899–1900:— Ponies.

'Burma never, as far as I can ascertain, was a horse-breeding country. Certainly ponies, and some good ones, were bred in Lower Chindwin, Pakokku, Myingyan, and Shwebo, but even in Burmese times the supply was from the Shan States. We hear much of the so-called Pegu pony, as if a special breed of ponies existed in Pegu. There is not now, nor, so far as I can find out, ever was such an animal. The justly celebrated Pegu ponies were Shans, imported from the States, possibly via Shwegyin and Toungoo.'

The Shan States are still the main centre for pony-breeding in the Province, though good beasts are to this day bred in the Upper Burma Districts referred to by Major Evans. There is a small stud of Government stallions, but breeding operations have so far been attended by no very great measure of success. The price of Burmese ponies varies, and has risen considerably during the past twenty years. The cost of a fair pony for ordinary purposes may be anything between Rs. 150 and Rs. 300. Racing ponies naturally command fancy prices.

Sheep and goats are bred to a small extent (mostly by natives of India), the former specially in the dry zone. A small breed of sheep is imported into Bhamo District from China. The average price of this Chinese variety is about Rs. 5. Indian sheep run to a somewhat larger figure, the maximum being sometimes as high as Rs. 12. The price of goats is about the same as that of sheep. Pigs are eaten freely by the Chins, Karens, and other hill tribes, and pig-breeding is carried on by Burmans as well as by Chinamen in certain localities. The Sheep and goats.

price of pigs in Sagaing District, which may be looked upon as a typical pig-breeding area, ranges from Rs. 10 to Rs. 40 a head.

Pasture grounds.

The area of uncultivated land in the Province is still so extensive that the provision of grazing-grounds has never been a matter of urgent importance; and in the dry zone of Upper Burma, where there are enormous stretches of land too poor for cultivation but suitable for grazing, the question is never likely to be a pressing one. Care has, however, been taken to provide for a future when cultivation may have spread to such an extent as to render the grazing problem a real one, and fodder reserves have been selected and demarcated. The matter is one to which special attention is directed when a District is being brought under settlement. Except in the dry zone, no special difficulties are encountered in providing food for cattle. In the dry Districts chopped millet stalks are largely used for fodder during the hot season, when vegetation is at its lowest ebb. In specially unfavoured tracts the water difficulty assumes serious proportions. In his *Summary Settlement Report* (season 1899–1901) the Deputy-Commissioner of Myingyan wrote as follows :—

'In parts of Kyaukpadaung and Pagan during the hot months, when the tanks are dry and people fetch their water daily, often from a distance of 6 miles, the cattle fare very badly, and it is quite common to find them being herded 15 miles from water. At this time they are watered only every other day, and sometimes even only once in three days. The condition of the cattle at this time is terrible, and many die on the long road between fodder and water.'

This state of things is, however, fortunately the exception.

Fairs.

There are in Burma no regular fairs at which live-stock are collected for sale as in India. Opportunity is, however, occasionally taken of the gatherings at pagoda festivals and the like to do business in cattle or other animals. The annual festival at Bawgyo in the Hsīpaw State, for instance, is usually made the occasion for a pony mart.

Irrigation works.

In Lower Burma, Prome and Thayetmyo Districts excepted, the heavy rainfall renders systematized irrigation operations unnecessary even for the culture of so exacting a crop as rice. The depth of water in the paddy-fields has to be carefully regulated, but an excess is without difficulty drained off through a temporary breach in one of the enclosing embankments, known as *kazins*; and if at any time the emptying has been injudicious, and a field is momentarily in need of an extra

supply of water, that supply will nearly always be available near at hand, and is admitted either by gravitation from an adjacent higher level or by lifting in a flat bamboo water-scoop. Thirsty crops, such as betel-vines, onions, durians, and oranges, are watered by hand.

In Upper Burma the case is widely different. In Myitkyinā, Bhamo, and the other northern Districts, it is true, the climatic conditions differ but little from those obtaining in the north of Lower Burma; but farther south it may be laid down as a general rule that, except in a few favoured tracts, rice cultivation can only be carried on successfully with the aid of a supply of water rendered available by artificial means and capable of being drawn upon at any time between seed-time and harvest. Other crops also need artificial watering, but it is only on behalf of rice cultivation that regular irrigation works are undertaken. The provision of a water-supply of the kind required has been recognized as a matter of vital interest in Upper Burma from time immemorial; and among the legacies bequeathed to the British by the Burmese government in 1886 not the least important were a number of irrigation works, for the most part damaged or useless, but valuable, if for nothing else, for the lasting testimony they bore alike to the needs of the people and to the responsibilities of their rulers. Of these, the most ambitious were the Kyaukse and Minbu irrigation systems, the Meiktila Lake and the Nyaungyan-Minhla tanks, and the Mu and Shwetachaung canals. In 1892 a Public Works Irrigation circle was formed in Upper Burma, not only to improve such of these larger systems as it was thought fit to preserve, but to put in order the host of minor village irrigation works that are scattered, in the shape of tanks and irrigation channels, through the greater part of the dry zone. The work undertaken has included projects for, and the construction of, new canals from loan funds, in addition to the remodelling, extension, and maintenance of old irrigation systems with funds provided from Provincial revenues. The only completed work of the class known as 'major' is the MANDALAY CANAL, opened in 1902, which is 39 miles in length, cost about 51 lakhs, and is capable of irrigating 89,000 acres. It waters much the same country as a canal dug by the Burmans before annexation, which proved a failure owing to faulty alignment and the inability of the Burmans to deal with the severe cross-drainage from the Shan plateau. The Shwebo Canal, another 'major' work which will benefit an even more extended area, is in course of construction[1],

[1] This canal was opened in 1906.

and will probably cost about 52 lakhs. There was a Shwebo canal before annexation, but the new work does not follow the line of its predecessor, which, however, still performs useful functions. The construction of two canals, in connexion with the Mon river in Minbu District, has been started, and two more canals, the Yeu and the Yenathā, are in contemplation; when completed they too will be 'major' works. The great majority of the Government irrigation works in Upper Burma are, however, what are known as 'minor' works. They are practically all adaptations of pre-existing native schemes, and for this reason only revenue accounts are maintained in respect of them. They consist partly of canals, partly of tanks. The canals are mostly in Kyaukse, Mandalay, and Minbu Districts: some of these are under the maintenance of the ordinary local officials, but the majority are kept up by the Irrigation department. The most important of the tanks maintained by the department are the Kanna tank in Myingyan District, the Meiktila Lake and the Nyaungyan-Minhla tank in Meiktila District, and the Kyaukse tank in Yamethin District. Scattered over the dry zone are a considerable number of small village tanks, locally constructed, for the management of which the department does not hold itself responsible. No revenue is paid for water supplied from these small indigenous works. At the end of the year 1903-4 the total area irrigated by 'minor' Government irrigation works amounted to 430 square miles.

Irrigation revenue.

Revenue, on account of water supplied from Government irrigation works, is levied in the shape of water rate, which varies in different localities, and which, on land cultivated with rice, ranges between R. 1 and Rs. 5-8 per acre. In settled Districts the water rate is included in the land revenue; in unsettled Districts it is assessed separately and is levied only on non-state land irrigated from Government works. The total collections of separate water rate in 1903-4 amounted to Rs. 24,423. Government canals and tanks are ordinarily in charge of the Executive Engineer. The carrying out of urgent repairs to Government irrigation works constitutes a public duty which villagers in the vicinity of the works are liable to be called out to perform. A similar duty devolves upon the residents in the neighbourhood of the embankments which, in the delta Districts, have been built to protect low-lying areas from excessive inundation by the rivers.

Until quite recently no revenue had been obtained from the 'major' irrigation works of Upper Burma, but the Mandalay Canal has now begun to pay. Up to the end of 1903-4 the

total expenditure on works of this nature had amounted to 81 lakhs, of which 50 lakhs were in respect of the Mandalay and 30 lakhs in respect of the Shwebo Canal. No reliable irrigation finance figures are available for the first few years succeeding the annexation of the Upper province. During the ten years 1891–1901 the average annual expenditure on 'minor' Government irrigation works of all kinds in Upper Burma was 9 lakhs, and the corresponding receipts amounted to 10·8 lakhs; the average net profits for each year of the period in question may accordingly be taken at nearly $1\frac{3}{4}$ lakhs. In 1903–4 the expenditure on these 'minor' irrigation works was 9·98 lakhs, and the gross receipts from the same 9·35 lakhs.

The only Government irrigation channel that is used for navigation is the Shwetachaung Canal in Mandalay District. On this tolls are levied on boats and timber.

Embankments.

In Lower Burma the only works having the same main agricultural objects as the irrigation works of the Upper province are the embankments in the delta of the Irrawaddy and Sittang, designed to guard the crops from the ill-effects of an overplus of water. In 1900–1 the total area protected or benefited by these works was 925 square miles. The working expenses incurred in connexion with these works during the same year amounted to 3·4 lakhs, and the share of the land and other revenue credited to them was 13·56 lakhs, the net revenue thus amounting to 10·2 lakhs, which represents 75 per cent. of the gross receipts. In 1903–4 the corresponding figures of expenditure and revenue were 4·8 and 16·1 lakhs respectively.

Indigenous methods of irrigation.

Tanks, wells, and canals are the ordinary indigenous means of irrigation in the Province. Water-wheels (*yit*) are used here and there on the banks of rivers; and there are other forms of water-lifts, of the trough, basket, or scoop type, known by different names, such as *ku*, *kanwe*, or *maunglet*. These latter are all worked by hand. A certain measure of engineering skill appears to have been devoted in Burmese times to the construction of canals. The village tanks already referred to are rough, very often consisting merely of a mass of earthwork thrown across the lower end of a well-defined catchment area; but as a rule they are judiciously selected, and can often be converted with the help of a little trained engineering skill into suitable irrigation works. There are wells in nearly every village, but as a rule they supply water solely for drinking and washing. Such wells as are dug for agricultural purposes are ordinarily found in the vicinity of betel-vine yards or fruit gardens. A rough well of ordinary depth can be dug for about

Rs. 25. The cost of a *pakkā* or brick-lined well is a good deal higher, and ranges, according to the depth, between Rs. 150 and Rs. 500.

So far as can be ascertained, the aggregate area irrigable by existing Government irrigation works of all kinds amounts to about 1,280 square miles.

Fisheries. The fisheries of Burma are important financially and otherwise. From time immemorial the exclusive right of fishing in certain classes of inland waters has belonged to the Government, and this right has been perpetuated in various fishery enactments, the latest of which is the Burma Fisheries Act of 1905. Fishing is also carried on along the coast, but the sea fisheries absorb but a small portion of the industry. Most of the fishermen labour in the streams and pools, which abound particularly in the delta Districts. The right to work these fisheries mentioned in the enactments alluded to above is usually sold by auction, and productive inland waters of this kind often fetch very considerable sums. River fishing is largely carried on by means of nets, and generally yields revenue in the shape of licence fees for each net or other fishing implement used. Here and there along the coast are turtle banks which yield a profit to Government. In the extreme south the waters of the Mergui Archipelago afford a rich harvest of fish and prawns, mother-of-pearl shells and their substitutes, green snails and trochas, shark-fins, fish-maws, and *bêche-de-mer*. Pearling with diving apparatus was introduced by Australians with Filipino and Japanese divers in 1893. They worked mainly for the shell, it being impossible for them to keep an effective check on the divers as regards the pearls. After about five years, when the yield of shell had decreased, they all left. The industry is now carried on by natives.

Rents, wages, and prices. The tenant class. In Burma the prevailing form of land tenure is that known as *ryotwāri*. As a general rule the agriculturist is a peasant proprietor, who makes all payments in respect of the land he works directly to the state. Under native rule, with a few exceptions, the original occupier of all land in Lower Burma obtained an almost absolute title to his holding subject to the payment of revenue; but, though their early codes go to show that the people of the country originally possessed what at first sight would seem to be an allodial right of property in land, there is evidence to indicate that their interests were of a subordinate nature, and the fact that in certain circumstances abandonment of cultivation entitled the crown to claim a holding, proves that the ryot's tenure, while carrying with it all

the outward powers of a proprietor, was strictly limited in the interests of the state.

In Lower Burma the main principles of land tenure were continued unchanged after the country had become a British possession, and were not defined by special legislation until many years later. In Upper Burma, on the other hand, a different land policy was introduced when land revenue legislation was first undertaken, less than three years after the annexation of the province. The proprietary ownership of waste land, i. e. of land which had been hitherto unoccupied for the purposes of cultivation, or which had been so occupied and had subsequently been abandoned, was held to be vested in the state; and Government asserted rights of ownership, inherited from the Burmese government, in islands and alluvial formations, in land previously termed royal land, and in land held under service tenures. Land coming within these categories formed a comparatively small proportion of the cultivated land of the province. Existing tenures remained, and still remain, undefined in respect of the greater part of cultivated land commonly called private land. Under both the Upper and the Lower Burma systems, however, the small peasant proprietor dealing direct with the state was the prominent figure in the revenue system, and it has thus come about that in Burma the relations between landlords and tenants have never assumed the prominence that they hold in *zamīndāri* Provinces. In 1881 tenants in Lower Burma were few in number; but in 1892 the Memorandum on the moral and material progress of the country during the preceding decade referred to the existence of a considerable and growing class of tenants in the Lower province, and gave an outline of this new trend of affairs:—

'This class is recruited mainly from persons who have formerly been landholders, have run into debt, and have in consequence had to part with the ownership of their holdings and occupy them as tenants. Many tenants, particularly in the delta of the Irrawaddy, are immigrants from Upper Burma and young men setting up house. Although a precise estimate cannot be made of the extent to which land is being, year after year, transferred from its original owners, it is certain that such transfers are now frequent in the neighbourhood of large trading centres, and that the area of land cultivated by persons in the condition of tenants, who have no statutory rights and pay rent to middlemen, is extensive and on the increase.'

In 1903–4 the total area let at full rents was 3,445 square miles. The same condition of things prevails, though to a less degree,

in Upper Burma in connexion with *bobabaing* or non-state land. Full data regarding the area rented are not, however, available for the Upper province.

Character of rents.

Rent is ordinarily paid in produce, taking the form of a proportion of the gross out-turn of the land leased. Cash rents exist, but at present they are the exception. In Lower Burma, in 1899–1900, only 3 per cent. of the total area rented was let at cash rents. It is somewhat difficult to say what conditions precisely determine the rent paid by the actual cultivator to his immediate landlord. In Upper Burma disinclination to move to a strange neighbourhood will frequently lead a stay-at-home cultivator to work land at a rent that leaves him the barest pittance to exist on; while a husbandman, with more land than he can work himself, will often be content to make over the use of his more distant fields for an abnormally minute share of their produce, indeed sometimes for practically nothing, if he has any fear that a temporary abandonment of non-state land may lead to its classification as state land. Within these extremes practice is ordinarily regulated by a blind adherence to local custom, which has decreed what proportion of the produce is to be regarded as a fair and proper rent for each kind of crop on each class of soil. In Lower Burma rent is based more on practical considerations, but it is doubtful whether it bears as yet any close relation to what experience has shown to be the actual selling value of land of similar quality in the neighbourhood.

Custom in Upper Burma has decided that the amount of produce paid as rent shall be more or less regulated by the proportion of the cost of cultivation borne by the tenant. Tenancies have here been defined as of two kinds: simple, where the tenant bears the whole cost of cultivation; and partnership, where the landlord contributes towards the expenses. Simple tenancies may be of different kinds. The rent may be fixed (*asu-the* or *asu-pon-the* tenancy), or it may be a share of the actual out-turn (*asu-cha*), or it may consist merely in the payment of Government dues. Of these the second is by far the commonest form. Partnership tenancy is known as *asu-konpet*. Partner landlords supply the seed-grain as a general rule, their further contributions to the cost of cultivation varying in different localities. The rent ranges between one-half and one-tenth of the gross produce. Leases are ordinarily for a year only in Upper Burma; in Lower Burma they are often for a longer period. The partnership tenancy system is not common in the Lower province.

Rents have had an upward tendency for many years in Lower Burma. The average rent per acre in 1890 was equivalent to Rs. 5. By 1895 this average had risen to Rs. 6·7, and by 1900 to Rs. 8. The following figures show the average rents per acre, in rupees, in each of the Divisions of Lower Burma in 1890 and 1900:—

	1890.	1900.
Arakan	4·2	7·5
Pegu	5·7	8·5
Irrawaddy . . .	5·1	7·8
Tenasserim . . .	..	8·2
Lower Burma	5	8

This represents the value of the produce rent on rice land converted into cash at the current market rates. Upper Burma rent statistics are incomplete, but it is clear that in parts of the Upper province rents are by no means low. In Kyaukse they are distinctly high, and in the Salin subdivision of Minbu the usual rent is half the gross produce.

Wages in Burma are high. Agricultural labour is less handsomely paid in the Upper than in the Lower portion of the Province, but even there it is generally higher than in most places in India proper. Agricultural wages usually take the form of a small money payment in addition to food and lodging, and the total money value of the remuneration thus given seldom falls below Rs. 7 a month. An energetic able-bodied agricultural labourer can, in most of the Upper Burma Districts, reckon upon earning from Rs. 8 to Rs. 12 a month in money value. Cooly-work is paid for at a slightly higher rate than ordinary field-work. In Lower Burma field-labourers are paid during the field season at rates which not infrequently work out to an average of Rs. 15 a month for the whole year. Cooly-work proper is a feature only of the large industrial centres, and it is practically in the hands of natives of India, with whom Rs. 15 may be looked upon as a fair average monthly wage. Skilled labour is paid for at much the same rate in both portions of the Province. Domestic service is largely performed by natives of India; and the facts that Burma is to Indians a foreign country, and that the general standard of wages and hiring is higher than in India proper, have succeeded in keeping servants' wages about 50 per cent. above the Indian level. Household servants are paid from Rs. 10 to Rs. 30 a month. The clerical wage may be said to Wages.

commence at Rs. 25 a month. Its maximum is about the same as in India. Artisans' wages fluctuate between Rs. 15 and Rs. 25 a month; and mechanics of very ordinary attainments are able to make as much as Rs. 60, the better classes being capable of commanding even a higher figure.

Besides payment in the form of lodging and food, wages frequently take the form of remuneration in kind. For the whole nine months of the agricultural season in Lower Burma, the field-labourer usually receives 100 to 120 baskets of paddy; and a common payment for assisting in transplanting from the *pyogin* or nursery is a basket of paddy a day in addition to food, for so long as the job lasts.

Wages are regulated wholly by the demand for labour, and the lack of mobility displayed by non-agricultural labour in Burma is the reason for the difference in the wages prevailing in different portions of the Province. Scarcity, the extension of railways, and mining or factory operations, have not as yet had any marked effect in altering the average wage.

Prices. Rice is the staple food-grain of the country, and its price is affected by an almost endless variety of conditions. Speaking generally, and for the past twenty years, it has been quite exceptional for a rupee to purchase (retail) less than 10 or more than 20 seers of cleaned rice, the precise figure between these two extremes being determined in each District by the harvest, facilities of carriage, scarcity in India, internal disturbances, floods, revenue legislation, paddy rings, extension of cultivated area, and a host of other factors. The following table shows the average prices of rice, salt, and jaggery at important centres for the three decades ending with 1900:—

	Average for the ten years ending	Price (seers * per rupee) at				
		Rangoon.	Moulmein.	Akyab.	Mandalay.	Meiktila.
Rice	1880	11½	12¾	15¼	...	...
	1890	13¼	12¾	15½	11¼	...
	1900	13¼	12¾	13	11	12¼
Salt	1880	25½	40	28½	...	...
	1890	21¾	22	28¾	18¾	12½
	1900	17¼	12	12¾	17½	13¾
Jaggery	1880	...	...	...	...	...
	1890	4¾	9½	4¼	4¾	6
	1900	7¾	9	6	5¾	8

* A seer is about 2 lb.

In 1903 the prices of rice in a few of the typical Districts of Upper and Lower Burma were as follows:—

Rangoon	. 17	seers per rupee, about	26 lb. for 1*s*.
Toungoo	. 11	" " "	17 "
Akyab	. 10	" " "	15 "
Mergui	. 10¼	" " "	16 "
Amherst	. 10¼	" " "	16 "
Mandalay	. 11	" " "	17 "
Bhamo	. 11½	" " "	18 "
Meiktila	. 11½	" " "	18 "

Apart from yearly fluctuations, due mainly to variations in the quality of harvests, there has been a slight but steady downward tendency during the last twenty years in the purchasing power of the rupee in regard to rice, which, in view of the enormous increase in the demand for the staple for export purposes, is not surprising. The only other food-grain of any importance in Burma is millet. It is eaten regularly in the poorer portions of the dry zone, but in other localities only when the supply of rice is insufficient for the requirements of the people. Its price in 1903 in two typical dry zone Districts of Upper Burma was—

Mandalay	. 29	seers per rupee, about	45 lb. for 1*s*.
Meiktila	. 20½	" " "	31 "

Material condition of the people.

The material condition of the people is better in Lower Burma than in the Upper province, where deficient rainfall or the lack of cultivable land in the vicinity of villages makes for a lower agricultural output and cuts down the profits of the husbandman. The financial advantages of the prosperous Lower Burma cultivator meet the eye less in his residence, household furniture, and ordinary dress than in his expenditure on food, ornaments, social ceremonies, and works of merit. There will be more silk waistcloths, anklets, and ear-plugs, more savoury accessories to the rice-bowl, and more festive gatherings in the rich farmer's house than in that of his poor neighbour; but the dwelling, and its fittings or lack of such, will be much the same in both cases, nor will any appreciable difference be noticeable between the outward circumstances of a villager cultivating his own land and of a landless day-labourer. The middle-class clerk, whose lines are for the most part cast in urban areas, will usually occupy a more pretentious building than the well-to-do agriculturist; his furniture and his everyday attire will be more elaborate; his jewellery will be more showy; his food will be richer; and

his charities will be less. During the past twenty years the advance in the standard of comfort has been considerable among the town population.

An ordinary everyday costume of cotton jacket, cotton waistcloth, and silk *gaungbaung* or headkerchief costs from 3 to 5 rupees. A good jacket can be purchased for Rs. 1–8 and a cotton *longyi* or loin-cloth for Rs. 1–4. A single square of Japanese silk is enough for a head-cloth, and its price is a rupee or even less, but for a full *gaungbaung* two squares are ordinarily required. Burmese shoes can be bought at between R. 1 and Rs. 1–8 a pair. Silk waistcloths are worn on special occasions. They cost from Rs. 10–8 upwards.

Forests. Classes and general description.

The forests of Burma may be conveniently classified as: I. *Evergreen*, comprising (1) littoral, (2) swamp, (3) tropical, (4) hill or temperate; and, II. *Deciduous*, comprising (1) open, (2) mixed, and (3) dry. The littoral forests are confined to Lower Burma, as are also, practically, the true swamp forests, while the dry deciduous forests mostly occur in the Upper province. The other classes are common to the whole of Burma. The mixed deciduous forests yield most of the out-turn of teak. Large areas covered entirely with teak are however not known, and it is rare even to find forests where teak is numerically the chief species. As a rule it is scattered throughout forests composed of the trees common to the locality. The *in* forests, so well known on laterite formation, belong to the open deciduous sub-class, while evergreen hill or temperate forests clothe a large proportion of the uplands of the Shan States. A considerable forest area in Burma is covered with a luxuriant growth of bamboo.

Characteristic trees.

The littoral and swamp forests contain little timber that is of any present value. In the tropical forests the *kanyin* (*Dipterocarpus turbinatus*) and *thitkado* (*Cedrela Toona*) abound, while the *thingan* (*Hopea odorata*), and the India-rubber tree (*Ficus elastica*), with oaks and pines, are typical of the evergreen hill forests. The mixed forests contain, besides teak and *pyingado* (*Xylia dolabriformis*), the *pyinma* (*Lagerstroemia Flos Reginae*) and the *padauk* (*Pterocarpus indicus*). In the dry deciduous forests the tree most utilized is perhaps the *sha* (*Acacia Catechu*), which furnishes the cutch of commerce.

Classification of area.

The forest area of the Province may be classified under two heads: 'reserved' forests, which are specially demarcated and protected, and whose produce remains entirely at the disposal of Government after satisfaction of the demands (if

any) of right-holders; and public forest lands, which are freely drawn on for trade and agricultural requirements. For the Reserves, which are responsible for the timber supply of the Province, working-plans are compiled so that a sustained maximum yield may be forthcoming in the future.

The area of the 'reserved' forests is increasing yearly as exploration of the forests proceeds, and time and staff are available for settlement duties. In 1881 the Reserves were 3,274 square miles in extent; in 1901, 17,837 square miles. In the latter year the area of public forest land aggregated 81,562 square miles. No new Reserve is created until full inquiry has been made on the spot with regard to existing rights, domestic or agricultural; and this formal recognition of prescriptive rights has done much towards rendering the people less antagonistic to the restrictions which it is sometimes necessary to impose for the welfare and maintenance of the forest. Areas once 'reserved' may, should necessity arise, be disforested in the public interest; and in times of scarcity of food or fodder the Reserves are placed at the free disposal of the people and their cattle.

System of management.

For administrative purposes the timber trees of Burma may similarly be divided into two classes, 'reserved' and 'unreserved.' The first includes teak, which is the property of Government wherever found, together with some eighteen other species to which this monopoly does not extend. The second class includes all other trees. 'Reserved' trees can be cut only under a Government licence; 'unreserved' trees, on the other hand, may, outside Reserves, be utilized free of cost for the domestic and agricultural requirements of the people, but their produce is taxed when extracted for trade purposes.

Teak.

Although the forests of Burma contain many valuable species of timber, some of which are largely used locally, teak is the only species in which an export trade of importance has yet been developed. The extraction of teak for trade purposes is carried out under the supervision of the Forest department, sometimes by means of Government agency, but chiefly by private firms under the system of purchase contracts. The annual yield in mature stems of a teak-bearing area is fixed for a term of years, and the given number of trees are annually girdled under the immediate control of a Forest officer. In the third year after girdling, when the timber has seasoned on the root, it is felled and logged. The logs are then dragged by buffaloes or elephants

to the nearest floating stream, whence they ultimately reach deep water on one of the main rivers and proceed on their long journey to the seaports, where they are converted into beams and scantlings and shipped to the consumer. Years may thus elapse before a girdled tree comes on to the market, for its progress depends on the amount and frequency of the monsoon precipitations which cause the necessary flushes or freshes in the floating streams. In 1881–2 the out-turn of teak from Government forests in Lower Burma was 31,246 tons, while the exports from the Province, including teak received from outside the limits of what was then British Burma, amounted to 133,751 tons. In 1892–3 the exports reached a total of 216,186 tons, valued at 164 lakhs of rupees, and ten years later a total of 229,571 tons, with a value of 203 lakhs, was recorded.

Minor forest produce.

The value of minor forest produce, including bamboos, utilized for trade purposes in Burma, has as yet reached no considerable amount. It stood at 4¾ lakhs of rupees in 1903–4. It must, however, be remembered that the inhabitants of the country receive all their requirements in forest produce free of royalty, and that transport difficulties are as a rule so formidable in the Province that at present it is not found to be remunerative to extract for export any but the most valuable forest products.

Protection and improvement.

The protection and improvement of the state forests in Burma is entrusted to the Forest department. Systematic operations for the settlement of forest areas, for their demarcation, survey, and protection from fire, involve the annual expenditure of very large sums. At the same time the extension of the forest area under the more valuable indigenous trees is not lost sight of. *Taungya* cultivation of teak is a speciality of Burma forest management, and consists in permitting shifting cultivation of cereal and other crops within Reserves, on the condition that teak seed is sown at the time of cultivation. The system is suitable to the requirements of the forest population, and has resulted in benefiting both the people and the forests. Plantations on an experimental scale of exotic species such as rubber and eucalyptus, &c., are also receiving attention, the object being to prove, if possible, that such projects are remunerative and so to open out a field for the enrichment of the country by private enterprise.

The following figures give the average annual financial results of forest management in Burma for the last two

decennial periods ending with 1900, and also the figures for the year 1903-4:—

	Revenue.	Expenditure.	Surplus.
	Rs.	Rs.	Rs.
1880-1890 . .	26,20,700	12,52,700	13,68,000
1890-1900 . .	60,84,200	19,80,600	41,03,600
1903-4 . . .	85,19,400	35,00,300	50,19,100

The forest surplus may vary from year to year, being dependent chiefly on the amount of teak which reaches the seaports; but the out-turn available in the forest is calculated on the anticipated demand controlled by the estimated annual growth of the tree.

Minerals.

The greater part of the as yet discovered mineral wealth of Burma lies in the upper portion of the Province. Petroleum is extracted in Arakan, and tin in Tavoy and Mergui Districts, but hardly anything in the shape of regular mining operations is carried on in the rest of Lower Burma. The principal oil-bearing areas are in the dry zone of Upper Burma; and gold, rubies, jade, amber, and coal have been discovered in paying quantities only north of the 22nd parallel of latitude.

Coal.

Coal has been found in the Northern and Southern Shan States, notably near Lashio, not far from the Mandalay-Lashio railway, at Nammaw and in Lawksawk, as well as to the west of the Chindwin in the Upper Chindwin District, in Thayetmyo, in Mergui, and in Shwebo District. The Chindwin coal appears to be of the best quality yet found, and in the opinion of experts the coal area is fairly large and the supply likely to be considerable. Difficulties of communication have, however, prevented the Chindwin fields from being worked, though it is probable that the existing obstacles will be surmounted in time. The only coal-mines which have been systematically worked are at Letkokpin near Kabwet in Shwebo District, which were started in 1891, and taken over by a company in 1892. The coal has been used on Government launches, on the railway, and on the steamers of the Irrawaddy Flotilla Company. The out-turn in 1893 from the Kabwet or Letkokpin colliery was 9,938 tons. By 1896 it had risen to 22,983 tons, but it fell after this, and in 1903 was only 9,306 tons. The average number of hands employed in 1900 was 246. The coal was carried on a tramway from the mines to the river bank, and the average selling price was about Rs. 10 per ton. The mine has now, however, been shut down.

Iron. Iron is found in the Shan States, in Mergui, and elsewhere. It has nowhere, however, been systematically extracted and dealt with on European methods. Iron-smelting is a purely local village industry.

Gold. Gold is found in the beds of many of the streams of both Upper and Lower Burma, and the gold-washing of past generations has left its impress on the country in town and village names like Shwegyin, Shwedwin, and Shwedaung. It has been found in a non-alluvial form in Tavoy District; in the Paunglaung Hills to the east of the Sittang; in the Shan Hills, and in Kathā District. The Kyaukpazat gold-mine in the last-mentioned District was worked for several years, but the lease has now been surrendered. In 1900 a prospecting licence was granted for gold-washing within the bed of the Irrawaddy, from the confluence above Myitkyinā to the mouth of the Taping river in Bhamo District. That gold exists in paying quantities in Burma is indubitable. A good deal more money, however, is required for the successful exploitation of the metal than capitalists have as yet shown a disposition to invest. The gold-leaf used so largely for gilding pagodas in Burma comes for the most part from China.

Rubies. Mogok is the head-quarters of the ruby-mining area of Upper Burma. The Ruby Mines are situated in the hills 60 miles east of the Irrawaddy, and about 90 miles north-north-east of the city of Mandalay. The stones are extracted partly by native miners and partly by the Burma Ruby Mines Company. The first lease to the company, granted by Government in 1889, was for the extraction of stones by European methods, and for the levy of a royalty from persons working by native methods, and provided for the payment of a share of the company's profits to Government. It expired in 1896, and was then renewed for a further term of fourteen years at a rent of Rs. 3,15,000 a year plus a share of the profits, the royalty system being continued. In 1899 a debt due by the company to Government was written off and the annual rent reduced to 2 lakhs, while the Government share of profits was increased. By a lease running for twenty-eight years from April 30, 1904, the royalty has been fixed at 2 lakhs, with 30 per cent. of the net profits. The system of extraction adopted is to raise the *byon* or ruby earth (found ordinarily some 20 feet below the surface) from open quarries, and to wash it by machinery similar to that employed in the South African diamond mines. The stones thus obtained are then sorted and the spinels are separated from the rubies.

The capital of the Ruby Mines Company stands at present at £180,000. The company's establishment was in 1904 approximately 1,600 strong. Of this staff 44 members were Europeans and Eurasians, the rest natives of India, Shans, Chinese, Maingthas, and Burmans. Rubies are found in the Nanyaseik tract, in the Mogaung township of Myitkyinā District, and in the Sagyin tract of Mandalay District, but neither of these areas approaches the Mogok ruby tract in point of productiveness. The Nanyaseik tract is now practically deserted.

The richest oil-bearing tract of Burma lies in the valley of the Irrawaddy, in the southern portion of the dry zone of the Upper province, at about the 21st parallel of latitude. It has been worked by the natives certainly since the middle of the eighteenth century, but modern boring appliances were not introduced till 1889. The three principal centres of the petroleum-extracting industry are Yenangyaung in Magwe District and Singu in Myingyan District on the eastern bank of the Irrawaddy, and Yenangyat in Pakokku District on its western bank. The oil is obtained partly from wells dug by native labour, but mainly by a system of regular boring carried on by the Burma Oil Company, which purchases the bulk of the oil obtained by the native workers (*twinzas*), and pays a royalty to Government of 8 annas per 100 viss (365 lb.) in the case of the older leases and per 40 gallons in the case of the later ones. From the wells the crude oil is conveyed by pipes to tanks on the river bank, where it is pumped into specially constructed flats or floating tanks which are towed by the Irrawaddy Flotilla Company's steamers to Rangoon. Here it is refined in the Oil Company's works at Syriam and Danidaw. In 1903 the value of the Yenangyaung oil extracted was 36·4 lakhs, and of the Yenangyat oil 15 lakhs. The royalty on the output of petroleum was 4½ lakhs in 1901 and 8 lakhs in 1903. The Burma Oil Company has a staff of over 7,000 employés, of whom about 150 are Europeans and Americans. The Rangoon Oil Company works also at Yenangyat and Singu, and oil is won by the Burma Oil Company from the Minbu Oil Company's concessions. Petroleum is also worked in the Akyab and Kyaukpyu Districts of the Arakan Division, but the Arakan fields are not to be compared with those of the dry zone for richness. The total production of kerosene oil in Burma has risen from about 10 million gallons in 1893 to 85 million gallons in 1903. Petroleum.

Hitherto jade has been found in paying quantities only in Jade.

the Myitkyinā District of Upper Burma. It is quarried in the hills during the dry months of the year by Kachins, and is purchased on the spot by Chinese traders, and by them transported in bulk by water and rail, for the most part to Mandalay, where the blocks are cut up. The purchase of the jade in bulk is a highly speculative transaction, as, till it has been sawn up, it is almost impossible to say how much marketable green jade a particular block may contain. Practically all the jade extracted finds its way eventually into China. The right to collect the *ad valorem* royalty of $33\frac{1}{3}$ per cent. on jadestone is farmed out by Government. In 1891 this right fetched Rs. 55,500. It was then sold annually, but a falling off in the amount paid rendered it advisable to extend the period of letting to three years. In 1899 the triennial lease fetched Rs. 60,350. The industry is not likely to pass out of native hands unless a fresh jade-bearing area is discovered.

Tin. Mergui District, in the extreme south of Burma, produces annually about 60 tons of smelted tin, and the neighbouring District of Tavoy about a ton. The methods employed are exclusively Chinese, but three European firms hold concessions. The industry has been carried on for thirty years without great success, and it has been said that much of the tin ore is of very low grade. The chief difficulties are the want of communications, and the fact that the tin-bearing tracts are everywhere covered with dense forest, which makes their examination a work of much labour and expense.

Amber. The mines from which the amber of Burma is dug are situated beyond the administrative border of Myitkyinā District in the extreme north of the Province, where mining operations are conducted on a very small and primitive scale by the natives of the locality. It is possible that in former times the amber area was more productive than it is at the present day.

Salt. The production of salt is a purely local industry. Salt is obtained in small quantities by boiling along the sea-coast, as well as here and there in nearly all the Districts of the dry zone of Upper Burma; but as a rule it is bitter and of poor quality, and is unable to compete with the imported article. The local output of salt in 1900 was estimated at 415,000 cwt. For 1902–3 the estimate was fixed somewhat lower, for a modification in the system of levying duty resulted in the temporary closing of some factories, but 1903–4 showed a rise to 517,000 cwt.

Other minerals. Silver and lead occur in the Myelat division of the Southern

Shan States, in the State of Tawngpeng in the Northern Shan States, and in the Mergui Archipelago; but their extraction has never assumed large dimensions. Alabaster, steatite, mica, copper, and plumbago, the last of poor quality, are also obtained in small quantities in portions of the Province.

The following is the out-turn of the principal minerals of Burma in the year 1903:— Out-turn of minerals.

Jade	1,402 cwt.
Rubies (value) . .	14,78,628 rupees.
Coal	9,306 tons.
Tin (ore) . . .	2,198 cwt.
Gold	1,397 oz.
Amber . . .	37 cwt.
Petroleum . . .	85,328,491 gals.
Petroleum (1890)	4,641,308 gals.

Arts and manufactures. Cotton-weaving.

Of domestic industries cotton-weaving is the most important and widespread. In 1901 the number of persons supported by cotton-weaving by hand was returned as 189,718, of whom the actual workers numbered 9,392 males and 136,628 females. This latter total represents a fraction only of the total of women and girls who were actually engaged in cotton-weaving at the time of the Census, for the great majority of those who wove solely for home consumption must have returned weaving, if at all, as a subsidiary occupation. The loom is a feature of nearly every house in certain localities; and in the past, before imported cloth began to compete with home-spun, its use must have been far more widespread than now. As it is, the foreign is slowly ousting the home-made article, and where home-weaving is still fairly universal more and more use is made of imported ready-dyed yarn. In fact, it is only in the cotton-growing areas of the dry zone that local thread is used in any quantities. There are no cotton-mills in Burma. Everything is woven on handlooms.

Silk-weaving.

Silk-weaving is a purely professional industry, though, like cotton-weaving, it is wholly the product of hand labour. The silk cloth woven is for sale, not, except in rare cases, for home consumption. The prospects of the silk-weaving industry have been damaged by the advent of cheap Manchester and Japanese silk goods, and the number of weavers in Sagaing and Mandalay, the head-quarters of the industry, has declined enormously of late years; but Burmese silk, where not woven of silk thread prepared and dyed in Europe, is still, by virtue of its texture and durability, able largely to hold its own. The best Burmese silk is woven from Chinese silk thread, purchased

raw and treated and dyed locally, but its comparatively sober hues fail to appeal to the average Burman as do the brilliant *acheik* and other cloths made of the gaudy silk thread of commerce. Silk is the attire of the well-to-do; and all but the very indigent, even when they ordinarily wear a cotton waistcloth, have a silk *paso* (waistcloth) or *tamein* (petticoat) stored up for gala days. The head-gear of the people is almost invariably of silk. The locally made silk is too stiff for the *gaungbaungs* or headkerchiefs of the men, and for this purpose custom has pronounced in favour of the flimsy Manchester or Japanese squares that are obtainable in all the bazars of the country. The total number of persons supported by silk-weaving in 1901 was 34,029, of whom the actual workers numbered 5,973 males and 18,316 females. The Districts of Prome, Mandalay, Kyaukse, and Tavoy showed the highest totals.

Embroidery.

Neither embroidery nor carpet-weaving exists as a widespread local industry. Cloth saddles are frequently decorated with patterns, and a near approach to embroidery is a form of *appliqué* work which consists of sewing figures of coloured cloth and spangles on to a dark cloth background. Curtains of this work are known as *kalagas*. As a rule they are barbaric but effective.

Jewellery.

Gold- and silversmiths and jewellers form a not unimportant section of the indigenous community. Workers and dealers in gold, silver, and precious metals, and their dependents, numbered 53,912 in 1901, the total of actual workers being 25,021. Silver jewellery is but little worn, but the better classes are profuse in their display of golden ornaments. Earrings (*nadaungs* and *nagats*), either of plain gold filigree work or enriched with jewels, are common; rings and bracelets of the same metal are popular gauds; children of well-to-do parents often wear gold anklets, and necklaces are affected by those of the fair sex who can afford them. Silver is mainly used for bowls and betel and lime boxes, the latter being occasionally of gold also. The making and designing of silver bowls has grown into what is probably the most attractive of the fine arts of Burma. The figures and patterns are executed, as a rule, in high relief, and the work, when well done, is singularly effective.

Ironwork.

Of indigenous ironwork there is little that is not exceedingly primitive. Iron implements of a rough kind, such as *das* and axes, are manufactured in considerable quantities, but all the better kinds of cutlery and other hardware used in the Province

are imported. The few iron foundries are almost all in Rangoon. Of the 26,221 workers and dependents shown in the census returns under the head of workers in iron and hardware, few can have been capable of executing anything more than the coarsest blacksmith's work. An exception must, however, be made in favour of the forgers of the inlaid knife-blades produced in Yamethin District, some of whose work is really meritorious.

Brass-work. Copper-working can hardly be said to exist in the Province. Brass-workers are fairly numerous (3,287 workers and dependents in 1901), though, as the Burman neither cooks in nor eats off brass, their total is a good deal smaller in Burma than it would be in an Indian community of corresponding numerical strength. Images of Buddha, bells, gongs, water-filters, spittoons, and bowls are the main products of the brass-worker's craft.

Pottery. Practically all the indigenous cooking is done in earthen vessels, and the trade of the potter is widespread. The actual workers and dependents connected with the production of pottery in 1901 totalled 19,800, a small number considering the extensive use made of earthenware. Pot-making is, however, often a subsidiary occupation, combined with agriculture, and thus a large proportion of the potters were returned at the Census under their main calling. The ordinary pottery is rough and homely; but here and there, as at Pyinmanā, Myinmu, and Kyaukmyaung, glazed pottery is made which is not without a certain measure of artistic merit. Bricks are baked extensively, and brickmaking must have been a recognized industry in connexion with the building of pagodas for centuries past. The industry supported rather over 7,000 actual workers and dependents in 1901.

Lacquer-work. Lacquer-work is common, the Myingyan District of Upper Burma being the head-quarters of the industry. The lacquer, the basis of which is the gum of the *Melanorrhoea usitata*, is laid over a foundation either of wood or bamboo wicker-work. Flat trays, or *byats*, and betel boxes, cylindrical, with deep covers and ornamented with quaint patterns, are the two articles that the lacquerer produces in greatest numbers. The Burmese lacquer-work is durable, light, and economical, and is outwardly attractive to the eye. The gold lacquer industry has almost disappeared from the Province. It will be a matter for regret if this art is allowed to die out finally, for it is distinctive and picturesque. The lacquer industry was the means of support of 14,274 persons of both sexes in 1901. Of these

4,277 males and 2,702 females were actual workers, more than one-third of them in Myingyan District.

Sculpture. Indigenous sculpture may be said to be confined to the making of alabaster figures of Buddha. The design adopted is always conventional and uniform. It is ordinarily helped out with a little outline colouring, and is absolutely devoid of artistic beauty. Of the 349 persons returned as working sculptors in 1901, all are probably to be included in the category of sacred image modellers.

Wood-carving. Wood-carving is a source of income to a small but not unimportant section of the community. Carving has always been a feature of the finer timber monasteries of the Province, and the art has been steadily fostered, though it has far fewer exponents than has the silver-work industry. The bulk of the wood-carvers are found in the main centres of trade, and their work, did they choose to produce systematically, would probably find a ready market among the European community. As a rule, however, they work to order and accumulate no stock of carved material. Burmese carving is free, and on the whole graceful, and is often executed in high relief. Floral and figure designs are frequently combined, and, considering the primitive nature of the tools employed, the result is, as a rule, singularly effective. It never fails from over-minuteness, for not only are the implements rough but the wood employed is ordinarily coarse-grained. The more delicate ivory-carving is also one of the arts of Burma, but its votaries are few in number and it is confined to a few special localities, such as Moulmein town.

Other industries. Mat-weaving is a popular industry, supporting 53,585 persons in 1901. Mats are of various kinds. The commonest sort are of bamboo, the better kinds are woven of cane and reeds. Those used for sleeping on are of the latter class, and are known as *thinbyu*. A rough paper used for wrappers, umbrellas, and the like is made in Möngnai and elsewhere in the Shan States from the white inner bark of a species of mulberry-tree known to the Shans as *maisaile*. Of the 749 persons actually engaged in the production of paper by hand in 1901, nearly half were enumerated in the Southern Shan States. The Burmese umbrella resembles the Chinese in outward appearance. It is light and graceful, but flimsy, and has unfortunately now had to yield largely to the black gingham of the European market. A total of 915 persons was engaged in 1901 in the production of the indigenous article. Cart- and boat-building are two of the important industries of the Province. Boats are of various kinds, ranging from the simple dug-out or *laung* to

craft like the *laungzat* or *peingaw*, elaborately carved and of a capacity of up to 40 tons. Cart-builders in 1901 numbered 5,946 actual workers and dependents, and boat-builders and their families 5,840. The use of European boots and shoes is becoming common in towns, but the ordinary Burman does not ordinarily look outside the Province for his foot-gear. His sandals (*panat*) are made of wood, leather, or felt, and are kept in position by two thongs which run from the two sides of the sole and unite in the front, passing between the great and second toes. The manufacture of Burmese sandals was the means of support of 12,864 persons in 1901.

Factory industries.

The year 1892 was the first in which statistics of factory manufactures were published in Burma. In that year 106 factories were registered under the Factories Act in the Lower province. One of them was a cotton press, 5 were iron-works, 2 printing presses, 52 rice-mills, 41 timber-mills, 3 ice-works, and 2 oil-works. The number of workmen employed in these factories was 21,136, of whom 20,335 were male and 588 female adults, while 213 were children. All these factories used steam-driven machinery, and each employed not less than twenty persons. In 1902 the number of factories under inspection in Burma had risen to 173, of which 96 were rice and 54 timber-mills. The great majority of the factories of the Province fall, and are likely for many years to fall, under one or the other of the two last-named classes. There were five iron foundries in Rangoon in 1902 and one in Moulmein; two oil refineries, both in Rangoon or in its neighbourhood; and a brewery in Mandalay. This last has not yet been brought under the provisions of the Factories Act. The total number of factory hands employed in 1902 was 28,517, of whom 27,890 were adult males, 527 adult females, and 100 children of both sexes. The figures for 1903 were: males, 31,327; females, 861; children, 157. The majority of the operatives come from India; and the growth of factory industries, though not affecting internal migration to any appreciable extent, has left its mark on immigration from outside the Province. Akyab draws its coolies mainly from Bengal; Rangoon and Bassein from the East Coast Districts of Madras. Wages in factories vary with the locality, as well as with the amount of technical skill required of the operatives. Highly trained mechanics receive as much as Rs. 60 a month, and even unskilled labour is very well paid. Male coolies ordinarily receive from Rs. 10 to Rs. 15 a month, and female coolies, when employed, are frequently paid at the same rates as the men. The material condition of the operatives

is indubitably good. The mill hand can live comfortably on half his monthly wage, and almost invariably returns to his country with a considerable hoard of savings. So remunerative is factory labour that the supply of operatives is always on a level with the demand.

Commerce and trade. Trade of Burma prior to annexation.

For centuries the seaboard of Burma has been visited by ships from many countries. Bassein was a flourishing port in the twelfth century, and at a later period we find Arabs and other Asiatic races in constant communication with Arakan, Pegu, and Tenasserim. Towards the beginning of the second half of the fourteenth century, Muhammadan merchants carried on a brisk trade between Pegu and the countries east and west. The Arabs brought to Burma goods of European manufacture as well as the produce of their own country; and large sea-going boats from Arakan visited the ports of Bengal. The principal exports from Bassein and Pegu were gold, silver, rubies, sapphires, long-pepper, lead, tin, lac, and some sugar. The imports from Arabia and the Persian Gulf to Syriam, an ancient emporium of Burma, close to the mouth of the Pegu river, were woollen cloths, scarlet velvet, and opium; and from Madras and Bengal piece-goods of various kinds. The trade of Malacca and places to the eastward was with Mergui and Martaban, then flourishing ports of Tenasserim, the imports being porcelain from China, camphor from Borneo, and pepper from Achin. From Arakan, rice was the principal export, the imports being muslins, woollens, cutlery, piece-goods, and glass and crockery ware. Tenasserim exported tin largely. After the cession of Arakan to the British, Akyab rapidly rose in importance. The trade of Tenasserim, when the British came into possession, was at a very low ebb. The country, however, had extensive teak forests, which led to the foundation of the town of Moulmein, where ship-building could be extensively carried on. Later on, after the second Burmese War, Rangoon came into prominence and has now far out-distanced the older ports.

General character of existing trade.

The chief items of the export trade of Burma are rice, timber, cutch, hides, petroleum, india-rubber, cotton, and precious stones. It is the rice produce and the rice exports that have made, and maintain, the prosperity of the Province. Paddy and rice now form more than three-quarters of the total exports. The only other item of export which can approach rice in importance is teak timber. The chief imports are piece-goods, silk, salted fish, wool, cotton twist, gunny-bags, betel-nuts, liquors, tobacco, iron, mill machinery, and sugar.

Chief centres.

The chief centres of trade in the Province are the seaports of RANGOON, MOULMEIN, AKYAB, BASSEIN, TAVOY, MERGUI, KYAUKPYU, SANDOWAY, and Victoria Point; and, in the interior, MANDALAY, BHAMO, PAKOKKU, PROME, HENZADA, and MYINGYAN. The bulk of the trade at the ports is sea-borne. Mandalay and Bhamo are the two main emporia for the trade with south-western China and the northern portion of the Shan States, which is wholly by land. The trade of Pakokku, Prome, Henzada, and Myingyan is partly river and partly land-borne. Rangoon exports rice, timber, cutch, hides, india-rubber, tobacco, and cotton. Akyab and Bassein export little else than rice, but Moulmein sends timber, also rice and a little tobacco. The chief exports of Mergui are fish and shrimp paste (*ngapi*), dried prawns, salted fish, mother-of-pearl and its substitutes, and tin. The produce that leaves Tavoy by sea is miscellaneous in nature, but rice preponderates; and it may be laid down in general terms that the amount of merchandise other than rice and timber which passes out through the smaller ports of the Province is practically a negligible quantity. Rangoon's chief imports are hardware, piece-goods, kerosene, salted fish, liquors, and sugar; and the smaller ports follow suit on a less extended scale, the only noticeable feature being Moulmein's large importation of betel-nuts and sugar. Mandalay is the head-quarters of the tea and jade trade of Upper Burma, and Myingyan is largely concerned with the cotton grown in the dry areas of the Upper Province. Rangoon possesses a Chamber of Commerce, formed in 1877 with a view to the furtherance of commercial interests in the Province, and a Trades Association. The port of Rangoon is administered by a Port Trust constituted under the Rangoon Port Act of 1905. There are thirteen commissioners, of whom four are elected by the Rangoon Chamber of Commerce and one by the Rangoon Trades Association, the others being appointed by the Local Government. The chief executive authority is vested in a full-time chairman who is also the Chief Engineer of the port. The receipts of the Port Fund in 1881 amounted to nearly 5½ lakhs, and its expenditure to over 6½ lakhs. In 1902-3 the corresponding figures were 15½ and 14⅓ lakhs respectively, and in 1903-4 the income had risen to over 17¾ lakhs.

Classification of trade.

The simplest method of classifying the trade of the Province is that which distinguishes between the internal and the external trade. External trade may be with countries beyond the limits of British India (trans-frontier) or with other Provinces of the Indian Empire. The trans-frontier sea-borne trade is

registered by the Customs department, the trans-frontier land trade with China, Siam, and other Asiatic countries by a Trade Registration department under the Director of Land Records and Agriculture. External trade with the rest of British India may similarly be maritime or land trade. In the former case it is generally known as coasting trade and is registered by the Customs department, in the latter it is not registered. Table V gives statistics of the sea trade of the Province with other Provinces and with foreign countries, and of its foreign land trade, for the years 1890–1, 1900–1, and 1903–4.

Internal trade.

The internal trade of Burma is still mainly in the hands of the Burmans; but they hold their own with difficulty when pitted against the natives of India and Chinamen, whose shrewdness and business capacity have enabled them to take a large proportion of the petty business away from the people of the country. The rail and waterways are the main commercial highways of the country in Burma proper. Up to 1892 practically the only statistics of internal trade were those furnished by the Irrawaddy Flotilla Company and the railway administration. In 1892 steps were taken to register the trade carried on by the country boats plying on the rivers of Burma, but it was found that the value of the information furnished was not commensurate with the cost incurred in collecting the required data, and in 1897 the arrangements were discontinued. The boat trade is still largely carried on by the indigenous population, and the floating pedlars it supports are able to reach a portion of the community untouched by bazars and the ordinary traffic of the market-place. Though its precise extent has not been gauged of recent years, the internal trade of Burma is comprehensive and far-reaching. Here statistical details, which must of necessity be defective, are of no great value. Advantage may, however, be taken of what has been collected in the past to place on record that in 1896–7, the last year of registration, the value of the internal trade of Burma was given as about 937 lakhs. Between Burma proper and the Shan States, and within the limits of the latter, there is a fairly extensive caravan traffic; bullocks and mules are the main means of transport, but a considerable portion of the merchandise is conveyed in baskets slung on bamboos upon the shoulders of carriers. This section of inland trade has been in the past, and is still, registered by the Trade Registration department. The value of the inland trade between Burma and the Shan States amounted in 1903–4 to over 78 lakhs under exports and 104 lakhs under imports. In return for the cotton twist, cotton

goods, salted fish, and betel-nuts, which form the bulk of what they take from Burma, the Shan States send into the Burmese markets tea (pickled and dry), timber, fruit, vegetables, and cattle. The Northern Shan States supply the greater part of the pickled tea (*letpet*) consumed in the Province. The value of this commodity imported from the Northern Shan States in 1903-4 was about 22 lakhs. Barter is occasionally resorted to by the inland traders, especially in the case of dealings with the hill tribes, but the practice is not widespread.

Coasting trade.

There is a little land trade between Burma and the rest of India. Goods pass between Akyab and Chittagong and Assam and the Upper Chindwin District; but the business done over these inland trade routes is insignificant, is not registered, and for general statistical purposes may be wholly left out of consideration. Burma's commercial intercourse with the rest of the Indian Empire may be said to be almost wholly maritime. It is carried on to a small extent by native craft; but the great bulk of what is known as the coasting trade of the Province is in the hands of the British India Steam Navigation Company, which unites the Province with all the chief commercial ports of the seaboard of the Indian Empire, besides furnishing steamer services which ply the whole length of the coast from Akyab to Mergui. The Asiatic Steam Navigation Company is also concerned in the coasting trade of the Province. It connects Rangoon with the Andamans and several ports of India. Of the imports from other Provinces the most notable are coal, tobacco, gunny-bags, cotton yarn, vegetable oil, and betel-nuts, while rice, mineral oil, and teak timber form the bulk of the exports. The coasting trade of the Province passes through the larger ports, namely, Rangoon, Akyab, Moulmein, Tavoy, and Mergui, and to some extent through Kyaukpyu, Sandoway, and Victoria Point. In the smaller ports the imports by coasting trade ordinarily exceed the exports. In Rangoon the case is reversed, and, taking the Province as a whole, the export business exceeds the import. Bassein is not visited by any of the regular coasting lines of steamers, and thus, though its foreign trade is far from inconsiderable, it does very little coasting business.

The table appended to this article (p. 149) shows that, excluding Government treasure, the total value of the maritime trade of Burma with other Provinces in the year 1903-4 was nearly 7 crores under imports and more than $4\frac{3}{4}$ crores under exports, the corresponding figures for 1900-1 being, in round figures, 6 and 10 crores. In the latter year the exports were raised by

abnormal demands for rice from the Provinces suffering from famine, especially from Bombay; and it may be said in general terms that the existence or non-existence of calls of this nature decides whether the coasting trade of the Province in any one year shall exceed or fall below its foreign trade. A noticeable feature of the coasting trade returns is the fact that famine in India, while affecting the destination of shipments from the rice-exporting ports of Rangoon and Akyab, has in the past failed to divert the rice supply of Bassein from its ordinary foreign channel.

Trans-frontier sea-borne trade.

The foreign sea-borne trade of Burma is carried by the boats of the Bibby, the Patrick Henderson, and other lines, and passes for the most part only through the larger ports of the Province: namely, Rangoon, Akyab, Moulmein, Bassein, Tavoy, and Mergui. Except at Rangoon, there is no comparison between the imports and the exports under foreign trade, the proportion the latter bear to the former in the lesser ports being roughly 20 to 1. An instance of this disparity may be cited. At Bassein the value of foreign exports in the year 1900-1 was over 103 lakhs, that of foreign imports was Rs. 354. Rice and timber are the main articles of export, and the imports are generally those indicated on p. 82. Details will be found in the table on p. 150, which shows that in 1903-4 the total foreign import trade was valued at 8¼ crores, and the export trade at nearly 16 crores.

The increase in exports and imports under foreign trade during the past twenty years has on the whole been steady. The trade of the first half of the decade 1891-1900 was disastrously affected by a combination entered into by the rice-millers in 1893 to keep down the price of rice. Since then, however, there have been no very marked fluctuations, though the effect of the scarcity of 1896-7 in Upper Burma is visible in the yearly trade returns.

In the matter of foreign imports the United Kingdom heads the list of supplying countries. In 1900-1 it supplied 4 crores' worth of goods, or 58 per cent. of the total, and in 1903-4 4¾ crores, about the same proportion. The Straits Settlements, important as a distributing rather than as a producing centre, are the second largest supplier. Japan follows next in the list of importing countries, and the rapid growth of its business with Burma is not the least significant feature of the trade statistics of the past decade. The Straits Settlements were Burma's largest customer in 1903-4, the exports exceeding in value those to the United Kingdom (349 lakhs against

254 lakhs); but it should be mentioned that information as to the ultimate destination of a good deal of the produce exported from the country by sea is defective, in consequence of the practice of shipping in vessels whose ultimate destination is unknown. A considerable portion of the exports to the Straits is intended for Java, Sumatra, Borneo, and Eastern Asia generally.

Trans-frontier land trade.

The trans-frontier land trade of Burma is carried on with China, Siam, Karenni[1], and French Indo-China, and is registered at a number of frontier stations. The trade with Western China passes for the most part over a route terminating at Bhamo on the Irrawaddy, though there is some traffic through Myitkyinā District and the Northern Shan States. A small portion of the Western China trade also passes through the registration stations established south of Maymyo along the Shan States border. Karenni sends its merchandise for the most part down the Salween to Kawludo and Kyaukhnyat. Dagwin, Tadanku, and Kwanbi, stations along the eastern frontier of the Tenasserim Division, secure the bulk of the trade between Burma and Chiengmai that does not pass through the Shan States, while commerce with the rest of Siam, besides traversing the Tadanku route, crosses the frontier hills near Kyeikdon in Amherst and Myitta in Tavoy District. The merchandise that enters and leaves the country by land is carried mostly by pack-bullocks and mules, though cooly-carriage is not uncommon. The traders seldom travel singly; and caravans mark, with jangling bells and clouds of dust, their progress up and down the main frontier highways during the whole of the dry season. The Burman himself takes very little active part in the trans-frontier land trade of his country. The carriers are Shans, Maingthas, Panthays, Chinese, and Siamese. The registration stations are placed on the roadside at suitable points where traffic converges, and the record of statistics may be said on the whole to be fairly accurate. In 1891 the total number of registration stations was 13, in 1904 it was 33.

The figures in the foreign land trade table appended to this article (p. 151) show that trade of this class increased very largely during the ten years ending in 1901. In the case of imports the total for 1901 is almost exactly double what it was in 1891, and the exports have more than doubled; the figures for

[1] Karenni, though controlled by the British Government, is not part of British India, and, for trade purposes, has been treated as a foreign country.

1903–4 show a further increase. The present trans-frontier land trade is in value and extent still far below the trade that passed before 1885 between British and Independent Burma, but its development during the past few years augurs well for the future. The distribution of the total of 1903–4 between the different foreign countries concerned is as follows, the figures being given in thousands of rupees :—

	Imports from.	Exports to.
Western China . .	27,00	35,95
Siam	16,37	10,77
Chiengmai . .	32,97	21,87
Karenni . . .	32,18	9,27
Total	1,08,52	77,86

Western China is mainly responsible for the growth in this class of trade. In 1891 its imports and exports were smaller than those of the other countries shown above, while it now heads the list. The main imports are teak timber, cattle, ponies, hides, tea, and silk. Cotton, cotton yarn, piece-goods, and dried fish make up the bulk of the exports.

Communications. Railways.

The backbone of the railway system of Burma is a line which, starting from Rangoon, runs northwards, some distance to the east of the Irrawaddy and more or less parallel with its course, as far as Mandalay, and thence proceeds through the country lying to the west of the river, bearing generally to the north, and curving eventually eastwards until it reaches the stream again at Myitkyinā, the head-quarters of the most northerly District of Upper Burma. This line, which is 724 miles in length, traverses the greater part of Burma from end to end. A steam-ferry service across the Irrawaddy connects the southern with the northern section at Sagaing, a few miles below Mandalay. The southern (Rangoon-Mandalay) section sends out two branch lines. The first, 71 miles in length, leaves the main line at Thazi, about 80 miles due south of Mandalay, and passes north-west, through Meiktila, to Myingyan on the Irrawaddy. The second starts from Myohaung, a junction just beyond the southern limits of Mandalay city, and runs north-east 180 miles into the Northern Shan States as far as Lashio. A noticeable feature of this line is the steel viaduct, 1,620 feet in length and at its highest point 325 feet above ground, which spans the Gokteik gorge. The northern section of the main line has also two branches : one runs westward from Sagaing

till it taps the Chindwin at Monywa and Alon (73 miles); the other is a minor feeder to the east, 15 miles in length, which terminates at Kathā on the right bank of the Irrawaddy and serves to connect that station, as well as Bhamo, a little farther up-stream, with the main system.

The southernmost portion of this main line, which extends 166 miles from Rangoon to Toungoo, a frontier station in the days preceding the annexation of Upper Burma, was commenced in 1881 and completed in 1885. The Toungoo-Mandalay section was taken in hand shortly after the annexation of the Upper province, and was completed in 1889. During the same year a start was made on the extension northwards (known first as the Mu Valley State Railway), and the final section, which brought Myitkyinā into direct railway communication with the south, was opened to traffic in 1899. The branch lines have been mostly completed since that year.

The oldest railway in the Province is, however, not a portion of the main line, but lies to the west of it, connecting Rangoon with Prome on the Irrawaddy. This railway, which was completed in 1877, is 161 miles in length. It runs in a north-westerly direction through the Pegu Division of Lower Burma. A branch line, completed in April, 1903, leaves it at Letpadan, about half-way between Rangoon and Prome, and runs to the left bank of the Irrawaddy opposite the town of Henzada. Here the stream is crossed by a steam ferry, and the line proceeds on from Henzada in a south-westerly direction to Bassein (115 miles). From Henzada a line northwards to Kyangin (66 miles) is under construction. Moulmein will shortly be connected with Rangoon by a line which will take off from the Rangoon-Toungoo section at Pegu, and, crossing the Sittang, will pass down the eastern coast of the Gulf of Martaban to the nearest suitable point of the Salween opposite Moulmein. It will be about 120 miles in length, and its construction has been taken in hand. The construction of a railway from the Toungoo-Mandalay section of the main line eastwards into the Southern Shan States is in contemplation. The extension of the Northern Shan States Railway from Lashio across the Salween to the China border has for the present been abandoned. Sanction has, however, been given for the survey of a line from Bhamo towards Tengyüeh in the Yünnan Province of China, and arrangements have been made to obtain the consent of the Chinese Government to the survey being carried beyond the frontier between the two countries.

Till 1896 the railways of Burma were state lines. They

were then taken over by the Burma Railways Company; and in 1897 a contract was entered into between the Secretary of State and the company which guaranteed interest at the rate of 2½ per cent. on the company's share capital of £2,000,000, and provided for the division between Government and the company of the annual surplus in the proportion of four-fifths to the former and one-fifth to the latter.

The total length of line open in 1891 was 609 miles; in 1901 it was 1,178 miles, and by 1905 it had risen to 1,340 miles. There was then one mile of railway to every 176 square miles of country, and the average cost of construction per mile had been Rs. 94,392. The gauge is metre.

Railway communication has done much towards reducing the prices of imported articles in the remoter portions of the country. Scarcity is as a rule so partial in Burma that it is doubtful whether the railway will ever be called upon to play as important a part in combating famine as it has fulfilled in less-favoured Provinces. There can be no doubt, however, that it will prove very useful whenever there is a failure of crops on a large scale in the Districts liable to scarcity, which are, as regards rail communications, exceptionally well served. The railway is proving a formidable competitor of the Irrawaddy Flotilla Company, which has practically a monopoly of the private carrying business on the inland waters of Burma; but river carriage is, for various reasons, still preferred to rail by a large section of the trading community.

Tramways. There are two steam tramways in the Province. The first is 8 miles in length and runs from Duyinzeik, on the Donthami river in Thaton District, to Thaton, the District head-quarters. The capital cost of construction up to the end of 1895, the last year for which capital and revenue accounts were submitted, was nearly 4½ lakhs. By an agreement entered into between Government and the original owner in January, 1884, a subsidy of Rs. 1,000 per mile was paid for three years after the date of opening on condition that a proper service should be maintained, and for ten years Government kept up all the bridges on the line. From December 1, 1900, the tramway passed into the hands of the Irrawaddy Flotilla Company. The receipts amounted in 1903 to Rs. 32,000. In all 34,362 persons travelled by the tramway during that year.

The other tramway is in Rangoon, and its construction and maintenance are regulated by the Rangoon Tramways Act (XXII of 1883). The cost of construction has exceeded 10 lakhs. Its working expenses and net earnings in 1903 were

about $1\frac{3}{4}$ lakhs and three-fourths of a lakh respectively, and the return of net earnings on capital is about 8 per cent. The number of passengers carried daily during 1903 was about 9,000. The line will shortly be electrified. An electric tramway on the overhead trolley system was opened in July, 1904, in Mandalay city. It is worked by the Burma Electric Tramways and Lighting Company, with a capital of £200,000; and its present length is 6 miles of double track. An application for permission to construct a light tramway from Mandalay to Madaya is at present under consideration.

Roads.

Nothing is more illustrative of the march of events during the past fifty years than the difference in the principles on which the road systems of the two portions of Burma have been designed. In Lower Burma the two principal roads, from Rangoon to Prome and from Rangoon to Toungoo, cover practically the same ground as two main stretches of railway line which later conditions showed to be necessary on strategical as well as commercial grounds. Upper Burma, on the other hand, came into the occupation of the British at a time when railway and road-building went naturally hand in hand. The railway there took the place of the trunk roads constructed in the early days of British authority in the Lower province, and the guiding policy of road-construction was to provide feeders for the railway line and the rivers. Railway expansion has enabled branch lines to be subsequently carried over ground covered by several of these feeders; but from the southern limit of Yamethin District to Myitkyinā in the north no considerable outlay has been incurred in the construction of communications that run in any way parallel with the main line of railway, and this policy has saved unnecessary expenditure which the conditions obtaining up to the last quarter of the nineteenth century rendered unavoidable in the Lower province. In Lower Burma, especially the deltaic portion, natural waterways have been largely used for communications, but, with the extension of the railway system, feeder roads are being provided to give access to new railway stations. In pursuance of this policy of affording approach to the main lines of river and railway communication, the Chin Hills have been connected with the Chindwin and the Irrawaddy by a system of cart-roads and bridle-paths from Kalewa and Pakokku as far as the Lushai Hills frontier, and similar action has been taken in the direction of the frontiers from Bhamo and Myitkyinā. The Irrawaddy and the railway are now in touch with all important towns and trade centres, while on the navigable portion of the Salween

and its branches several useful feeders have been completed within recent years.

In 1891 the main road lines of the Province were the road running from Rangoon to Prome; the road from Rangoon to Pegu, and thence in sections to Toungoo; the road from Myingyan to Fort Stedman, passing through Meiktila and connecting the Irrawaddy with the head-quarters of the Southern Shan States; and the road from Thabeikkyin to Mogok in the Ruby Mines District. A considerable portion of an important road from Mandalay through Maymyo to Lashio in the Northern Shan States, the precursor of the railway in the same direction, had been completed by the same year, when there were approximately 4,674 miles of road outside municipal limits in both portions of the Province, 1,110 of which were metalled. By 1901 the total length of communications other than municipal roads had risen to 8,999 miles, of which 1,588 miles were metalled, but no important modification had been introduced into the road system of the Province. After the Mandalay-Lashio road referred to above, one of the largest undertakings completed in this decade was a mule track from Fort Stedman to Kengtung, then the remotest military station in the Province, which will shortly be superseded by a cart-road as far as the Salween, 228 miles from the railway. Another useful frontier track is that leading from Bhamo south-eastwards to Namkhan on the Chinese border, and an important work has recently been commenced in the shape of a road which crosses the frontier in Bhamo District and leads to Tengyüeh in Yünnan. A road is under construction to connect the navigable waterways near Moulmein with the Siam frontier, which is also reached by a road from Tavoy. In 1904 the total length of Provincial roads amounted to 9,369 miles.

The expenditure on land communications other than municipal in 1890–1, 1900–1, 1902–3, and 1903–4 was as follows:—

Year.	Original works.		Repairs.	
	From Imperial and Provincial funds.	From Local funds.	From Imperial and Provincial funds.	From Local funds.
	Rs.	Rs.	Rs.	Rs.
1890–1 .	11,00,000	1,43,000	7,05,000	53,000
1900–1 .	12,62,000	2,53,000	17,51,000	1,71,000
1902–3 .	19,82,000	1,03,000	18,41,000	2,26,000
1903–4 .	23,63,000	1,34,000	18,40,000	2,22,000

Though much has been done in the way of road-making and maintenance, land communications in the interior are still defective. Many of the roads are mere mule tracks, and a large proportion are practically impassable during the height of the rainy season. In the wet Districts cart-roads are few and far between, but in the dry areas of Upper Burma country carts are able to move about freely at all seasons of the year. The Burmese cart is light but durable. Till recently the prevailing type of wheel in the rural area was of the solid kind, rough, often very far from circular, and highly destructive to the roads. This form of wheel has, however, of recent years been largely superseded by the spoked variety. On these wheels considerable labour and occasionally some little artistic skill are expended, in marked contrast to the body and shafts, which are almost invariably of the roughest description. Tilts or covers of matting or thatch are common.

Burma abounds in rivers, streams, and tidal creeks, and the southern portion of the Lower province is a veritable network of natural waterways. Thus in Lower Burma there has never been any pressing need for canals, and such artificial additions as have been made to the existing water system consist generally of transverse (east and west) connexions of the streams that run southwards into the sea. The principal navigable canals are the PEGU-SITTANG CANAL, uniting the Pegu river and the Sittang; the TWANTE CANAL, forming a junction between the Irrawaddy and the Rangoon river; the SITTANG-KYAIKTO CANAL, a waterway running south-east from the Sittang into the western portion of Thaton District; and the Shwetachaung Canal in Mandalay District. Work on the Pegu-Sittang Canal commenced in 1873–4, and the channel was opened in the beginning of 1878. The Twante Canal was begun in 1881–2 and opened in May, 1883. The year 1882–3 saw the commencement of the work on the Sittang-Kyaikto Canal. This last was intended to form a portion of a larger undertaking, the union of the Sittang and Salween rivers; but the second section of this project, that between Kyaikto and Bilin, has been abandoned. The Shwetachaung Canal is an old Burmese irrigation work near Mandalay remodelled and used for navigation purposes. Tolls are levied on it and on the Pegu-Sittang Canal, but on no other of the navigation channels in Burma. The capital expenditure on the Pegu-Sittang Canal up to the end of 1903–4 was 44 lakhs, that on the Twante Canal 3 lakhs, and that on the Sittang-Kyaikto Canal 10 lakhs. No capital accounts are, however, kept for any of

Canals.

the navigation channels above referred to. Up to the end of 1903-4 the receipts from tolls on the Pegu-Sittang Canal aggregated 19·3 lakhs, against a total outlay of 58·6 lakhs. So far the realizations from tolls on the Shwetachaung Canal have been insignificant and form a small portion only of the revenue from the work.

Steamer lines.

The British India and the Asiatic Steam Navigation Companies are the two regular lines which carry passengers coastwise within the limits of the Province. The British India steamers ply the whole length of the coast from Akyab to Mergui. The Asiatic Steam Navigation Company's principal passenger work lies between Rangoon and Port Blair, but their boats visit other coast ports. Both these lines also connect Burma with Indian ports, and the British India boats run from Rangoon to Penang and Singapore. Direct communication between Burma and Europe is kept up by the steamers of the Bibby Line and the British and Burmese Steam Navigation Company (Patrick Henderson). The great bulk of the river steamer traffic is in the hands of the Irrawaddy Flotilla Company, whose boats and flats are familiar objects on nearly all the inland waters of Burma. This company owned (at the end of 1903) 45 river steamers and 75 other steamers of various descriptions, working over a length of more than 5,000 miles, and carrying nearly 2¼ millions of passengers. The company employs over 7,000 persons, and its receipts in 1903 exceeded 81 lakhs. There are a few small private lines, but the Government, with its fleet of Indian Marine and local river-boats, is the only other river carrier of importance. Native craft of all kinds ply on all the larger rivers. Ferries abound in all the river Districts. They are managed by Government lessees, who are required under the terms of their leases to conform to Government rules prescribing rates of tolls and other matters connected with the working of the ferries.

Postal arrangements.

In the early days of British dominion in the Province postal arrangements were on a small scale. Government steamers and country boats were used largely for the carriage of mails in the interior. Postal communication between Rangoon and Calcutta, and Rangoon and Moulmein, was fortnightly, and there was a mail once a month to Tavoy and Mergui. There are now three direct mail steamers weekly between Rangoon and Calcutta, and one between Rangoon and Madras. Steamers ply between Rangoon and Moulmein every other week-day, while all the other principal stations on the sea-coast are served once in seven days. The steamers of the Irrawaddy Flotilla

Company carry letters at least weekly to the few river stations where the railway has not secured a daily service. From all the main centres District post lines radiate out into the rural areas, and there is no place of any commercial or administrative importance in Burma proper that the post has not placed in ready touch with the outside world. The first year for which postal statistics are available is 1862–3, when the total number of letters received and dispatched was 673,939, and of other articles, such as parcels, books, and newspapers, 177,287. These totals had risen by 1878–9 to 1,286,990 and 393,835 respectively. In 1881–2 there were 55 post offices open in Burma. In 1891–2 there were exactly 200 more; in 1900–1 the total was 299, and in 1903–4 it was 399. The following table gives the main postal statistics for the years 1880–1, 1890–1, 1900–1, and 1903–4:—

	1880-1.	1890-1.	1900-1.	1903-4.
Number of post offices	30	247	298	339
Number of letter-boxes	101	445	1,228	1,404
Number of miles of postal communication	6,557	8,943	10,882	11,381
Total number of postal articles delivered* :—				
Letters . . .	1,778,411	8,726,523	12,875,495	15,629,509
Postcards . .	43,383	557,837	1,303,356	1,783,077
Packets . .	42,444	483,220	2,260,297	2,379,253
Newspapers . .	434,063	1,694,618	1,456,471	1,786,023
Parcels . .	28,496	144,984	220,525	188,726
	Rs.	Rs.	Rs.	Rs.
Value of stamps sold to the public . .	1,29,843	4,25,470	5,32,132	6,65,163
Value of money orders issued . . .	20,45,210	1,44,54,250	2,79,21,972	3,43,99,037
Total amount of savings bank deposits .	...	19,67,378	33,79,913	29,32,304

* The figures for 1880-1 include the Andaman Islands.

In 1881–2 the total of postal employés of all classes was 171. By 1903 the aggregate of the postal establishment had risen to 1,592, a figure which includes Imperial establishments only and does not comprise a host of rural postmen and peons employed on the District post system whose services are paid for out of local revenues.

Famine.

Its abundant rainfall has placed Lower Burma, humanly speaking, wholly out of reach not only of real famine but even of such distress as would follow on a partial failure of crops. In the southern half of Upper Burma the monsoon is often

fickle and untrustworthy, but even here famine in the Indian acceptation of the term is practically unknown. Floods and insect pests work no widespread havoc among the crops. Drought has in the past temporarily disorganized the Districts of Meiktila, Yamethin, Minbu, Magwe, Shwebo, Sagaing, Myingyan, and Mandalay, and has rendered the opening of relief works necessary; but every year the improvement of communications and the construction of irrigation works thrust famine proper farther and farther out of the category of probable national scourges. The recently opened canal has rendered parts of Mandalay District immune; and the next few years should see the same result achieved in parts of Minbu and Shwebo. Meiktila, Yamethin, and Sagaing are traversed from end to end by one, if not two, lines of railway; and Magwe lies between the railway line and the river Irrawaddy, and is, after Yamethin, the closest of the dry Districts to the well-watered areas of Lower Burma. That scarcity has left its mark upon Upper Burma is, however, indubitable; for, though mortality from famine (direct or indirect) is infinitesimal, failure of crops is largely responsible for the relatively small rate of increase that has taken place during the past ten years in the population of the dry zone (12 per cent. as against 27 per cent. in the moist Districts of Lower Burma), and no amount of irrigation works and railway lines will be able to place some of the arid areas in a position to compete with the wetter portions of Burma or to free them from periods of anxiety. Before annexation famines in Upper Burma were of not infrequent occurrence. No reliable details regarding their area and intensity are forthcoming, but there can be no question that they were at times very severe. Between the annexation and 1891 there was no extensive scarcity. In 1887 there was a partial failure of crops in a portion of what is now Shwebo District, but relief works were not considered necessary. In 1891 deficient rain caused a shortage of crops in the greater part of the dry zone. From December, 1891, to March, 1892, distress was acute over an area of more than 80,000 square miles, emigration on a large scale to Lower Burma commenced, and it was necessary to open relief works and grant gratuitous relief, though recourse to the latter step was not frequent. The number of persons on relief works during the period of greatest depression was over 20,000, and the cost of the measures taken to combat the scarcity amounted to more than 15 lakhs. The period between 1891–2 and 1896–7 was one of indifferent harvests in Upper Burma. In

1895–6 there was a partial failure of crops, and in 1896–7 the early rains failed in the Districts of Meiktila, Myingyan, and Yamethin. The area affected by the drought covered 5,300 square miles, with a population of 528,000 persons. The first relief works opened were unimportant; but later it was found that more extensive operations would be needed, and work was started, first on the earthwork of the Meiktila-Myingyan Railway, and then on a large tank in Myingyan District. From December, 1896, to February, 1897, the average of persons in receipt of relief was 28,000. There was a diminution during the next few months, but by August the aggregate had risen to 30,000. The grant of gratuitous relief was found necessary, and the expenditure on aid of all kinds to the sufferers was a little over $5\frac{1}{2}$ lakhs. Since then there have been threatenings of scarcity, but no real distress, in Upper Burma. Even the most serious scarcity experienced so far in the Province must, when judged by Indian standards, be looked upon as slight. None of the droughts has added appreciably to the death-rate of the Province, no deaths from privation have been recorded as a result of their occurrence, and no visible reduction of the birth-rate has followed in their wake.

The construction of irrigation works is the principal measure adopted to minimize the results of deficient rainfall in the famine-affected areas. These works are on a large scale, for experience has shown that tanks and the like with an insignificant catchment area cannot be relied upon in the lean years. The necessity for adequate professional knowledge in the matter was one of the causes which led to the establishment in 1892 of a separate Public Works Irrigation Circle, on the officers of which devolves the duty of designing and carrying into execution schemes for supplementing the existing water-supply of the more arid tracts. The weekly crop reports compiled by Deputy-Commissioners from data furnished by township officers regarding the price of grain, the nature of the weather, the existence of conditions likely to affect the harvest, and cognate matters, enable a constant watch to be kept on the economic condition of the agricultural community and give the earliest intimation of any possible scarcity of crops.

Administration.

The provinces of Arakan and Tenasserim were acquired in 1826, after the first Burmese War. The former became a portion of Bengal, the latter was administered by the Governor-General through a Commissioner. When Pegu was annexed in 1852, Martaban was placed under the Commissioner of

Tenasserim, and the rest of the Province under a second Commissioner, also directly subordinate to the Governor-General, with his head-quarters in Rangoon. The whole of British Burma was constituted a Chief-Commissionership in 1862, and Sir Arthur Phayre was appointed Chief Commissioner. His successors were General A. Fytche (appointed 1867), Sir Ashley Eden (1871), Sir Rivers Thompson (1875), Sir Charles Aitchison (1878), Sir Charles Bernard (1880), Sir Charles Crosthwaite (1887), Sir Alexander Mackenzie (1890), and Sir Frederic Fryer (1895). In 1897 the Province was constituted a Lieutenant-Governorship, and Sir Frederic Fryer became the first Lieutenant-Governor. He was succeeded by Sir Hugh Barnes in 1903, who was followed by Sir Herbert White in 1905.

The direct administrative functions of Government are performed by the Lieutenant-Governor through the medium of the Secretariat, which consists of five secretaries, four under secretaries, and two assistant secretaries. One of the secretaries deals with railway and another with ordinary Public Works business. The following are the principal heads of departments: the Financial Commissioner, who has a secretary and an assistant secretary; the Settlement Commissioner and Director of Land Records and Agriculture (with Deputy and Assistant Directors); the Inspector-General of Police; the Director of Public Instruction; the Inspector-General of Prisons; the Inspector-General of Civil Hospitals; the Accountant-General; and the Postmaster-General. The last two represent Imperial departments under the Government of India. A Chief Conservator of Forests has recently been appointed. The Financial Commissioner, besides dealing with Land Revenue, Stamps, Income Tax, and Excise, is also chief Customs authority, Inspector-General of Registration, and Registrar-General of Births, Deaths, and Marriages.

The territories under the control of the Lieutenant-Governor consist of (*a*) Burma proper, (*b*) the Shan States, and (*c*) the Chin Hills.

Divisional and District system. The Division, in charge of a Commissioner, is the largest administrative area within Burma proper. Each Division is made up of a number of Districts, under Deputy-Commissioners; Districts are divided into subdivisions under subdivisional officers; and one, two, or more townships, under a township officer, go to each subdivision. Commissioners are always, and Deputy-Commissioners are ordinarily, officers of the Burma Commission. In the Northern Arakan and Salween Districts

the Deputy-Commissioner is a Police officer. Subdivisional officers are members either of the Commission or of the Provincial or Subordinate civil services (Extra Assistant Commissioners or *myo-oks*). Township officers (*myo-oks*) are practically always members of the Subordinate civil service. There are 8 Commissioners' Divisions (4 in Upper and 4 in Lower Burma), with an average population of 1,157,000 and an average area of 21,000 square miles; 37 Districts, with an average population of 250,000, and an average area of 4,556 square miles; 82 subdivisions, with an average population of 112,840, and an average area of 2,056 square miles; and 194 townships, with an average population of 47,695, and an average area of 869 square miles. Particulars regarding each District and Division as constituted in 1901 will be found in the table on pages 146 and 147. The village system is in operation in both portions of the Province. In Lower Burma the *ywathugyi* or village headman, in charge of a single village or of a group of villages small enough to be efficiently administered by a single village official, has, so far as the collection of revenue is concerned, taken the place of the *taikthugyi*, or circle headman, whose jurisdiction embraced a much larger area. In Upper Burma he is absorbing the *myothugyi* of pre-annexation days, an official whose jurisdiction corresponded in a measure with that of the *taikthugyi* of Lower Burma. The *ywathugyi* is in the first place responsible for the maintenance of order in his charge. He is also the rural revenue collector, and receives a commission on his collections; he exercises petty criminal and, in certain cases, petty civil judicial powers, and is the indispensable intermediary between the people and their rulers. The office has been made as far as possible hereditary, and often attracts a really good class of man. There were about 18,500 village headmen in the Province in 1903.

For the purposes of police and medical administration the divisions of the Province are to all intents and purposes the same as for general civil administration. Each District has a Superintendent of police and a Civil Surgeon, whose jurisdictions coincide with that of the Deputy-Commissioner. The Public Works and Forest administrative areas, on the other hand, differ to some extent from the civil. In their case the unit is the division in charge of an Executive Engineer or a Deputy-Conservator of Forests, as the case may be, and the division often comprises portions of different civil Districts. Divisions are grouped into circles, which are, in the case of the

Public Works department, in charge of Superintending Engineers and, as regards Forests, of Conservators. There are six Public Works and four Forest circles in Burma. Public Works divisions are divided into subdivisions, and Forest divisions into subdivisions and ranges. For educational purposes Burma is divided into circles under Inspectors of Schools and sub-circles under Deputy-Inspectors. There are four education circles, each of which comprises several civil Districts. The head-quarters of three of them are at Rangoon, those of the fourth at Mandalay. The education sub-circle ordinarily corresponds to a civil District. There are nine postal divisions, each under an Inspector of post offices, and three Telegraph divisions with twelve subdivisions [1]. The medical officer in charge of a station in which a jail is situated is *ex-officio* Superintendent of the jail.

Native States. The Shan States.

The Shan States, though a portion of British India, do not form part of Burma proper and are not comprised in the regularly administered area of the Province. They lie for the most part to the east of Upper Burma. They owed allegiance to the Burmese government but were administered by their own rulers (Sawbwas), and the British Government has continued to a certain extent the semi-independence which it found existing in 1885. As at present defined, the Shan States are divided into—

(1) States under the supervision of the Superintendent, Northern Shan States, whose head-quarters are at Lashio;

(2) States under the supervision of the Superintendent and Political Officer, Southern Shan States, whose head-quarters are at Taunggyi;

(3) The Myelat States, under the supervision of the same officer;

The Superintendents of the Northern and Southern Shan States have Assistant Superintendents under them.

(4) A State under the supervision of the Commissioner, Mandalay Division.

(5) States under the supervision of the Commissioner, Sagaing Division.

The civil, criminal, and revenue administration of every

[1] The Arakan Telegraph division comprises the Chittagong Division of Bengal, a portion of which is included in the Akyab Telegraph subdivision.

State in the Northern and Southern Shan States is vested in the chief of the State, subject to the restrictions specified in the *sanad* or order of appointment granted to him. The law administered is the customary law of the State, so far as it fulfils the general conceptions of justice and does not run counter to the spirit of the law of India. Chiefs can inflict the punishment of death on their own subjects for certain heinous offences, but the Superintendents have a general control over the administration of criminal justice and exercise broad revisionary powers. In criminal cases in which persons other than natives of the Shan States are concerned, the jurisdiction is vested in the Superintendents and their Assistants. A simple procedure has been prescribed for the local criminal and civil courts. In revenue matters the chiefs administer their charges according to local rules and customs, which have been but slightly modified by the British Government.

The Myelat consists of a number of small Shan States which form a strip of territory running, north and south, to the west of the Southern Shan States, and lying between them and the Districts of Kyaukse, Meiktila, and Yamethin in Upper Burma. So far as civil law and revenue matters are concerned, the administration is the same in the Myelat as in the Southern Shan States. The criminal law, however, is practically the same as that of Upper Burma. The total area supervised by the Superintendents of the Northern and Southern Shan States is 57,915 square miles, with a population of 1,137,444 persons in 1901.

The one State under the supervision of the Commissioner, Mandalay Division, is Möngmit, to the east of the Ruby Mines District, which, with its dependency Mönglang, is administered by the Deputy-Commissioner as if it were a subdivision of that District. Its administration is about (1906) to be handed over to the Sawbwa, who has attained his majority.

The States under the supervision of the Commissioner, Sagaing Division, are two in number: Hsawnghsup (called by the Burmans Thaungdut) and Zingkaling Hkamti. Both are on the banks of the Chindwin river. These are the last survivals of the collection of Shan States to the west of the Irrawaddy, many of which in ancient days acknowledged the suzerainty of the Sawbwa of Mogaung. To this category belonged also the State of Wuntho, in which a rebellion broke out in 1891, and which was in consequence absorbed into Upper Burma; and the State of Kale, which was abolished in the same year. The law administered in Hsawnghsup and

Zingkaling Hkamti is practically the same as in the Northern and Southern Shan States.

The Chin Hills. The Chin Hills lie to the west of the river Chindwin and form a block of territory about 8,000 square miles in extent, which in 1901 contained a population of 87,189. They are supervised by a Superintendent, with head-quarters at Falam, and four Assistant Superintendents. The law in force is regulated by the Chin Hills Regulation (V of 1896). So far as the indigenous races are concerned, the criminal law is, with a few modifications, the same as the law of Upper Burma, and the petty Chin Hills chiefs have not the same administrative powers as the Shan Sawbwas. A small portion of the Chin Hills, known as the Pakokku Chin Hills, is outside the jurisdiction of the Superintendent, and is controlled by the Commissioner of the Minbu Division. A portion of the Chin area lying between the Chin Hills proper and the Northern Arakan District is not administered.

Other States. The Kachin tracts in the north, within the limits of the Province, are administered under the Kachin Hill Tribes Regulation (I of 1895). Beyond those limits the hill tribes are not directly controlled; and similarly no attempt has yet been made to administer Hkamti Long, a collection of petty Shan States in the extreme north of the Province, beyond the administrative border of Upper Burma—a geographical line, drawn at about the 26th parallel of latitude, along the northern border of Myitkyinā District. In the case of Karenni, on the other hand, a certain measure of control is exercised. The Karenni States lie on both sides of the Salween river, to the east of Toungoo District, and are bounded on the north by the south-western corner of the Southern Shan States. They are not part of British India and are not subject to any of the laws in force in the Shan States or Burma; but the Superintendent, Southern Shan States, and an Assistant Superintendent stationed at Loikaw exercise certain judicial powers in the States.

Law and justice. Legislation. A Legislative Council was created for Burma in 1897, which consists of the Lieutenant-Governor and nine members, five of whom are official and four non-official. The members do not as yet possess the rights of interpellation and of discussing the Provincial budget, which have been granted to the Councils of the older Provinces.

The following are the chief legislative measures specially affecting Burma which have been passed since 1880 and are still in force:—

Acts of the Governor-General in (Legislative) Council.

Burma Steam Boilers and Prime Movers Act, XVIII of 1882.
Lower Burma Pilots Act, XII of 1883.
Burma Steam Boilers and Prime Movers Act, I of 1885.
Burma Military Police Act, XV of 1887.
Financial Commissioner, Burma Act, XVIII of 1888.
Lower Burma Village Act, III of 1889.
Lower Burma Towns Act, IX of 1892.
Northern India Excise Act, XII of 1896.
Burma Laws Act, XIII of 1898.
Lower Burma Courts Act, VI of 1900.

Regulations of the Governor-General in (Executive) Council.

Upper Burma Municipal Regulation, V of 1887.
Upper Burma Village Regulation, XIV of 1887.
Upper Burma Land and Revenue Regulation, III of 1889.
Upper Burma Towns Regulation, VI of 1891.
Upper Burma Criminal Justice Regulation, V of 1892.
Kachin Hill Tribes Regulation, I of 1895.
Upper Burma Civil Courts Regulation, I of 1896.
Chin Hills Regulation, V of 1896.
Upper Burma Registration Regulation, II of 1897.

Acts of the Burma Legislative Council.

Burma General Clauses Act, I of 1898.
Burma Ferries Act, II of 1898.
Burma Municipal Act, III of 1898.
Lower Burma Town and Village Lands Act, IV of 1898.
Burma Gambling Act, I of 1899.
Rangoon Police Act, IV of 1899.
Burma Forest Act, IV of 1902.
Burma Canal Act, II of 1905.
Burma Fisheries Act, III of 1905.
Rangoon Port Act, IV of 1905.

Administration of justice.

Till recently there was in Burma no such regular separation of judicial and executive functions as has been developed in the older Provinces of India. A scheme for the more satisfactory disposal of civil appeals and criminal trials and appeals by whole-time District and Divisional Judges in Lower Burma has, however, now been introduced. It involves the appointment of five Divisional Judges and seven District Judges (with jurisdiction extending over the areas shown in the tables on the next page), and has been adopted to relieve the pressure caused by the growth of judicial work in the Irrawaddy Division and in the Lower province generally.

A regular township judicial service has recently been created for Lower Burma. It consists of thirty-six judges.

DIVISIONAL JUDGES.

Number of Divisional Judges.	Area of jurisdiction.	
	Division.	Districts.
1	Hanthawaddy	Hanthawaddy and Pegu.
1	Prome . .	Tharrawaddy and Prome.
1	Bassein . .	Bassein, Henzada, and Thayetmyo.
1	Delta . .	Ma-ubin, Myaungmya, and Pyapon.
1	Tenasserim .	Toungoo, Thaton, Amherst, Salween, Tavoy, and Mergui.

DISTRICT JUDGES.

Number of District Judges.	Area of jurisdiction.
1	Hanthawaddy District.
1	Pegu and Toungoo Districts.
1	Tharrawaddy and Prome Districts.
1	Bassein and Henzada Districts.
1	Myaungmya, Ma-ubin, and Pyapon Districts.
1	Akyab District.
1	Amherst and Thaton Districts.

Upper Burma.

The criminal procedure followed in Upper Burma differs in some particulars from that in the Lower province. For Upper Burma certain modifications in regard to powers of magistrates, appeals, and the like have been introduced into the Indian Criminal Procedure Code (which regulates the practice of the Courts in Lower Burma) by the Upper Burma Criminal Justice Regulation (V of 1892). The Code of Civil Procedure has been adapted to the special conditions of Upper Burma by the Upper Burma Civil Courts Regulation (I of 1896). The Chief Court for Upper Burma in both criminal and civil matters is that of the Judicial Commissioner at Mandalay. Commissioners of Divisions are Sessions Judges, and try cases without the aid either of jurors or assessors. The Mandalay Division has an Additional Sessions Judge. Deputy-Commissioners are District Magistrates, and exercise the special powers conferred by section 30 of the Criminal Procedure Code. Subdivisional officers are usually first class, and township officers second or third class magistrates. The Civil Courts Regulation created the following grades of civil courts in Upper Burma: the township court, presided over by the township officer, with jurisdiction up to Rs. 500; the subdivisional court, presided over by the Subdivisional officer, with jurisdiction up to Rs. 3,000; the District court, presided over by the District Judge (Deputy-

Commissioner), without limit of pecuniary jurisdiction; the Divisional court, presided over by the Commissioner of the Division; and the Judicial Commissioner's court. The last two courts are purely appellate. The District court hears appeals from courts subordinate to it, appeals from the District court being heard by the Divisional court or by the Judicial Commissioner, according to the value of the suit or the nature of the decree.

Lower Burma.

In Lower Burma the Chief Court occupies the position of a High Court for the purposes of both civil and criminal justice. It was constituted in 1900 and is presided over by four judges, two of whom are members of the Indian Civil Service and two barristers. The Chief Judge is at present (1906) a barrister. The Chief Court discharges the functions previously performed by the Recorder of Rangoon, the Judicial Commissioner of Lower Burma, and a Special Court in which both these officers sat together, sometimes along with a third judge. In Arakan the Commissioner is Divisional and Sessions Judge. Elsewhere there are the special whole-time judicial officers referred to above. Sessions cases are tried with the aid of assessors, except in the Rangoon town sessions (where a judge of the Chief Court sits as Sessions Judge and cases are tried by a jury) and in Moulmein town. The Deputy-Commissioner is District Magistrate. In Lower Burma the Criminal Procedure Code is in force unmodified. For the purposes of civil procedure the Code of Civil Procedure and the Lower Burma Courts Act (VI of 1900) are followed. The courts created by the latter enactment are, besides the Chief Court, those of the township, the subdivision, the District, and the Division. In both Lower and Upper Burma the Government appoints judges, and, while appointing *ex officio* judges to some courts, appoints persons by name to others. In Upper Burma the executive officers are *ex officio* civil judges except in a few townships. In Lower Burma there are special civil judges in about half the courts. There are twenty-four benches of honorary magistrates in the Province, and at the end of 1904–5 the number of these magistrates was 174. They generally sit in municipal towns for the disposal of petty cases.

Criminal statistics.

There has been a steady growth in the amount of criminal judicial work in the Province during the last two decades. In 1881 the total of cases brought to trial in Lower Burma was 23,181. In 1891 the Lower Burma cases reached an aggregate of 38,755, while those of Upper Burma numbered 13,433, making a total of 52,188 for both portions of the

Province. In 1901 the corresponding total was 70,161, and in 1903, 76,750[1].

In a community increasing as rapidly as that of Burma a steady rise in the figures of crime is to be looked for. It may be safely said, however, that improved detection has had as much to do with raising the figures as has increase of population. It is probable that in a few urban areas crime is actually and proportionately more rife at present than it was in 1881; but, looking at the Province as a whole, there can be no doubt that the gravity of the crime committed is far less now than it was ten or fifteen years ago. The annexation of Upper Burma and the disturbances that succeeded it transformed the whole nature of the crime of Burma. Sentences of transportation rose from 153 in 1885 to 1,504 in 1886; sentences of imprisonment for more than seven years from 32 to 78. The total of robberies and dacoities brought to trial in Lower Burma in 1881 was 101. In 1886 it was 1,180, and in 1888 no less than 1,419; and it was not till well into the second decade under review that real headway was made against offences of this violent nature which, curiously enough, have been far more prevalent of late in Lower than in Upper Burma. The number of dacoities and robberies brought to trial in both portions of the Province in 1890 was 1,039; in 1891 it was 734; by 1896 it had fallen to 527, and by 1900 to 208. While crimes of violence have been diminishing, offences of a petty nature, especially against special and local laws, have been on the increase. It is the rise in these minor forms of crime that is responsible for a good deal of the growth apparent since 1881.

Civil justice.

If the effect of the annexation on the crime returns of the country was marked, the impress that it left on civil judicial business was hardly less significant. For the ten years prior to 1881 litigation had been nearly stationary in Lower Burma. Between 1882 and 1884 the total number of suits instituted rose from 32,267 to 35,478. In 1885 the aggregate declined, and in 1886 there was a further general decrease, which was continued into the next year, so that the figure for 1887 fell to 32,367 or only 100 in excess of the total for 1882. The following year (1888) saw a real commencement in the restoration of order, and the litigation figures again rose. There was a further substantial increase in 1889, which may be said to reflect the almost complete renewal of the feeling of security that the disturbances following on the annexation had temporarily

[1] For statistics as to the number of persons brought to trial in these years see table on p. 152.

dispelled. The total of cases instituted in that year was 37,904 in Lower Burma. There was a falling off in litigation there in 1890, but the value of cases was higher than in the previous year, and the total of cases instituted in Upper Burma rose largely. This increase in the Upper province, despite the scarcity of 1896, has been maintained uninterruptedly ever since. In Lower Burma, on the other hand, there have been considerable fluctuations. The total for both portions of the Province was 58,143 in 1901, and 68,656 in 1903. Further statistics will be found in the table on p. 152.

Registration.

The Indian Registration Act (III of 1877) is in force in Lower Burma. In Upper Burma the Registration law is that embodied in the Upper Burma Registration Regulation (II of 1897). The Financial Commissioner is Inspector-General of Registration in Lower Burma, Commissioners are Inspectors of Registration and Deputy-Commissioners are Registrars. There are also Sub-Registrars (treasury, subdivisional, and township officers) in each District. In Upper Burma the registering officers are ordinarily subdivisional or township officers, but the Financial Commissioner, the Commissioners, and the Deputy-Commissioners control and supervise registration work. There is an intimate connexion between registration and litigation. Thus during 1886 and 1887 there were marked decreases in the total of documents presented for registration in Lower Burma, while 1888 showed an increase which continued till 1893, when registrations fell off in number. There was then a rise in 1894 and a second fall in 1895 and 1896, since which date registration work in Lower Burma has been growing steadily. As in the case of litigation, the increase in registration in Upper Burma has been regular and sustained. The total of documents registered in British Burma in 1880–1 was 6,107. In 1890–1 the figure had risen in Lower Burma to 11,013, while the aggregate in 1900–1 for both Upper and Lower Burma was 29,594. In 1903 the total was 40,731, and the number of registration offices was 146.

Finance. Resources of native rulers.

The main sources of revenue in Lower Burma under Burmese rule were a tax based more or less on the land cultivated, taxes on ploughs, transit dues, judicial fees and fines, and a few other imposts. In Upper Burma prior to the annexation the kings looked for their revenue in the first place to the *thathameda* or income tax, but also to the rent of state land, to receipts from forests and minerals (rubies, jade, and earth-oil), and to other items of receipt, such as water rate, fisheries, transit dues, monopolies, ferries, and bazars. In Lower and

Upper Burma the revenues were farmed out to unsalaried native administrators (*myozas*, literally 'eaters of districts'), who paid a fixed sum on account of their *myos* into the royal exchequer, and retained the larger amount they had succeeded in extracting from the long-suffering taxpayers. With the abolition of this system in Lower Burma, after annexation, the finances of the country began to show an upward tendency. The revenue of Arakan expanded between 1826 and 1855 from 2·3 to 12·8 lakhs, while that of Tenasserim rose from Rs. 27,000 in 1829 (three years after its annexation) to 8·3 lakhs in 1855. Between 1855 and 1882 the revenue of Lower Burma increased from about 1 to 3 crores of rupees. This total includes all receipts, whether eventually credited to Provincial revenues or not, as well as the incomes of municipalities and 'Excluded' Local funds.

Financial settlements. All items of the revenue of Burma, other than those derived from municipal and purely local sources, fall into one or other of two classes. They may be treated as Provincial, in which case they are at the disposal of the Local Government, or as Imperial, in which case a portion returns into the country in the form of payments, the balance being absorbed into the Imperial exchequer (see Chapter on Finance, Volume IV, chapter vi). The financial relations of the Local and Supreme Governments have for the last quarter of a century been regulated by periodical settlements. The first of these was made in 1878, and further settlements took place in 1882, 1892, 1897, and 1902. Till 1897 the finances of Upper Burma were excluded from this arrangement, but in that year the Upper Burma accounts were also provincialized and included in the terms of the 1897–1902 settlement.

Lower Burma, 1878–9. Under the first settlement with the Government of India, that of 1878–9, the Imperial exchequer received five-sixths, and the Provincial one-sixth, of the revenue of the Province.

1882. Under the scheme which came into operation in 1882, fixed percentages of land revenue, export duties, and salt revenue, and the whole of the receipts and charges of certain departments, were assigned to the Province. At the same time, half of the receipts and expenditure under the heads Forest, Excise, Stamps, and Registration became Provincial. The 1882 settlement was not favourable to Burma; only in the first and last years of its currency was there a Provincial surplus. In each of the other three years there was a deficit, which had to be met from Imperial revenues. The average annual receipts and expenditure during the currency of this settlement were—

Imperial and Provincial combined, receipts 2·73 crores, charges 1·60 crores; Provincial alone, receipts 1·29 crores, charges 1·35 crores. In 1887–8, in lieu of a fresh quinquennial settlement, a provisional arrangement was entered into by which the terms of the previous settlement were continued with certain modifications, the chief of which fixed the shares of land revenue at two-thirds Imperial and one-third Provincial, and a special assignment of $4\frac{3}{4}$ lakhs was granted to Provincial to cover the probable excess of expenditure over revenue. This arrangement was continued up to 1889–90, when the Imperial share of excise receipts and charges was increased to three-fourths, and the receipts and charges in connexion with income tax were equally divided, the loss thus caused to Provincial being adjusted by a contribution from Imperial. During the five-year period covered by these arrangements, the combined Imperial and Provincial receipts and charges averaged 3·33 crores and 1·70 crores yearly, and the Provincial alone 1·51 crores and 1·45 crores. The quinquennium was one of economic progress and closed in conditions of material prosperity. Under the settlement of 1892 the Provincial shares of land and fishery revenue were reduced to one-fourth, while that of stamp revenue was raised from one-half to three-fourths. These and other changes caused a loss to the Provincial government, which was met in part by an increase in the lump grant from Imperial to Provincial, fixed at $41\frac{1}{2}$ lakhs per annum. The average annual receipts and charges during the currency of the 1892 settlement were: under Imperial and Provincial combined, 4·26 and 2·19 crores respectively, and for Provincial alone, 2·01 and 2·03 crores. The settlement was, on the whole, a favourable one from the Provincial point of view, though the credit balance at its close was lower than at its commencement.

1887–8. 1889–90. 1892–3.

Upper Burma finance may be said practically to date from the year 1887–8. At the outset the revenue was small; but it increased steadily and at the end of the ten-year period 1887–97 was double what it had been at the commencement, and this despite the fact that the last year of the decade (1896–7) was a year of scarcity marked by a substantial diminution in land revenue. With the settling down of the country after annexation cultivation was largely extended, and the progress of settlements raised the revenue total. Forests and Railways also showed very large increases. The average annual receipts and expenditure during the ten years in question were 1 crore and $1\frac{3}{4}$ crores respectively.

Upper Burma, 1887–97.

Upper and Lower Burma, 1897–8. The year 1897–8 saw the commencement of a fresh quinquennial settlement. It was the first which comprised the finances of the Province as a whole. Under its terms the Provincial share of land revenue and excise was raised to two-thirds and a half respectively, and the lump sum grant from Imperial to Provincial was reduced from 41½ lakhs to 39 lakhs. During the currency of this settlement the total receipts and expenditure of the Province averaged 6·93 and 4·20 crores annually, and the Provincial share averaged 3·47 and 3·26 crores respectively. On the whole the period covered by the settlement was one of material prosperity. The harvests were good; there were large extensions of cultivation, and land revenue settlement operations resulted in a rise in the rate of assessments over a large area. In each year of the quinquennium both revenue and expenditure exceeded the standard figure very considerably, and the period closed with a Provincial credit balance of 120 lakhs, a sum nearly four times as great as the balance in hand at its commencement.

1902–3. By the settlement of 1902 the Provincial share of land revenue receipts was reduced from two-thirds to one-half, and that of excise revenue and expenditure from one-half to one-third.

A table printed at the end of this article shows the average receipts under the main heads of revenue during the decades 1881–90 and 1891–1900, side by side with the actual receipts for 1900–1 and 1903–4. The figures are illustrative of the steady growth of revenue during the past twenty years. A corresponding table indicates the fluctuations in Provincial expenditure during the same period.

Land revenue system. Government rights in the land. The principles that underlie the land tenures of the Province have been indicated in an earlier paragraph. In Lower Burma a permanent right of use and occupancy in land may be acquired by prescription or by virtue of a specific grant from the state. In early days a theory seems to have sprung up that the people of the country had, of their own motion, surrendered a portion of their produce to the monarch, as a return, so to speak, for his assumption of the arduous and responsible duties of ruler. The theory is based, no doubt, on a democratic fiction; and, whatever its merits may be, the principle that the permanent right of use and occupancy aforesaid does not free land in Lower Burma from its liability to pay revenue has never been seriously disputed. In Upper Burma the crown's ownership in the soil was unmistakably affirmed for all future time by the Upper Burma Land and Revenue Regu-

lation (III of 1889), which declares the proprietary ownership of the state in all waste land and in all islands and alluvial formations, as well as in land known under the Burmese régime as royal or service land. At the same time it was recognized that there was land in Upper Burma in which the full proprietary title of the crown had been extinguished, much as in Lower Burma, by the prescriptive rights of private individuals in the past. In the case of this land the ownership appeared, moreover, at first sight, to have passed more fully away from the state than in Lower Burma, since for some time prior to the annexation the sovereigns of Upper Burma had abstained from levying land revenue on it, although rent was paid on state land. It is more than probable, however, that this abstention was due, not to the idea that the Burmese government had relinquished all rights in private land, but to the fact that the primary source of revenue in pre-annexation days was the *thathameda*. This tax—which appears in the first instance to have been a proportion of the produce of the fields, and at one time to have been actually taken from the grain-heap and paid in kind by all classes of landholders—gradually assumed a form which caused its intimate connexion with the land and its fruits to be lost sight of, and, by the time the British came into occupation, had developed into something that may be described as approximating more closely to an income tax than to any other form of impost. However that may be, the Upper Burma Land and Revenue Regulation established the right of Government to demand land revenue from the holders of non-state, no less than from the holders of state, land; and this right, even when not actually enforced since then, has been held to be only temporarily in abeyance. Where both classes of land are assessed to land revenue, the private landholder has the advantage in a lower assessment and in full rights of transfer. In the case of all but non-state land there are certain restrictions on the right of alienation. Thus in Lower Burma transfers of land granted or leased by Government are forbidden within five years of the execution of the grant or lease (or within a longer period if exemption from land revenue has been allowed), without the previous sanction of the Deputy-Commissioner; while in Upper Burma no transfer of state land held on lease can be made to a non-agriculturist, or to a person who is not a native of Burma, without the previous sanction of the township officer.

Settlements.

As has been already stated, Burma is a *ryotwāri* Province :

that is to say, the cultivator, as a general rule, pays his land revenue to the state direct and not through the medium of a landlord. In the early days of the British occupation of the Lower province, an attempt was made in Arakan by the revenue officials, fresh from a *zamīndāri* Province, to erect the village headman, on whom the collection of the revenue devolved, into a species of *zamīndār*; but this policy does not appear to have been a success and was not persisted in. The assessments of revenue are fixed, subject to revision, at periodical settlements for which no uniform period of duration has yet been prescribed. The term seldom exceeds fifteen years in Lower Burma; and in Upper Burma, where a regular settlement policy is still in process of development, fifteen years has been the maximum up to date. The whole of the Province has not yet been brought under regular settlement, but only a comparatively small portion of the cultivated area of Lower Burma remains unsettled. In Upper Burma the settlement of the greater part of the dry zone Districts is either complete or approaching completion, and a commencement has been made on the remoter wet areas; but the land revenue system in the Upper province is still in a state of transition. Settlement operations are more elaborate in Upper than in Lower Burma; the crops are more varied than in the Lower province; the field season is longer, and additional labour is thrown on the settlement officer by the investigations entailed in preparing a record of rights and occupation, and in adjusting the *thathameda* on the classes who do not depend solely upon agriculture for their livelihood. In Upper Burma the District is settled as a whole, in Lower Burma in tracts of varying size. In the unsettled Districts of Upper Burma non-state land is ordinarily not assessed to land revenue, and state land pays at rates based on local custom and varying from locality to locality. In the second edition of the *Imperial Gazetteer* it was stated that the basis of the land revenue settlement in Burma had been '20 per cent. of the gross produce after many deductions, payable to Government in money at the rates of the price of grain in the circle within which the land is situated.' It is now a generally accepted principle throughout India that land revenue rates should be calculated on the net and not on the gross produce; and, speaking generally, it may be said that 50 per cent. of the net produce is what is looked upon in Burma as the theoretical maximum. The actual rates are, however, as a rule far below this. In Lower Burma the provisional maximum is one-fourth of the net produce, and rates varying from

one-tenth to one-sixth are the most common. To arrive at the rates the land is first classified according to its fertility, the approximate productiveness of each class is ascertained by crop measurements, and the money value of the gross produce is arrived at after a consideration of average prices extending over a considerable period of years. From this is deducted the cost of cultivation, computed on a liberal scale, and on the net remainder the rates are based. In the settled Upper Burma Districts non-state land is ordinarily assessed at rates 25 per cent. lower than those at which state land is assessed, while in a few Districts all *ya* land (see page 50), whether state or non-state, is assessed at a single rate. A fallow rate of two annas per acre is levied in Lower Burma on land which has been left uncultivated in order to allow it to recover from exhaustion, or as a result of causes over which its occupier had no control; otherwise a rate ranging between two annas an acre and the normal cultivation rate is ordinarily levied. In Upper Burma the assessment is levied on matured crops only, and rates are not assessed on either failures or fallows.

Land revenue collected by native rulers.

It is practically impossible now to form anything but the roughest estimate of the amount of land revenue assessed and collected by the Burmese kings in the days that preceded the annexation of the Lower Province. In addition to a form of income tax, the amount of which was gauged by the area of land cultivated by each assessee, a tax was paid in Arakan and Tenasserim, prior to 1826, on every plough used; and it was not till 1831 that any attempt was made by the British to assess the cultivated land by area instead of by the plough. Before the second Burmese War added Pegu to the Indian Empire, the tax upon the land cultivated in that Province was according to the yokes of cattle employed, the only exception to the general rule being Prome, where half the produce (apparently the gross produce) was taken from some lands and no other demand was made on the occupiers. The revenue of Pegu prior to annexation was nominally nearly 15 lakhs, and to this total private exactions on the part of the minor officials are computed to have added 10 lakhs more; but this figure represents only the revenue that was not paid in service or in kind, and there are no means now of separating the purely land revenue from the other items, such as transit dues, timber revenue, and the like, which went to make up the aggregate. In Upper Burma in 1884, i.e. immediately before annexation, the amount collected from the rent-paying royal rice-fields, cultivated grounds, and gardens was rather

more than $3\frac{1}{4}$ lakhs in money payments, and a little over a million and a half baskets of paddy. These rents, however, formed only a small portion of the total revenue of the kingdom; the greater part was furnished by the *thathameda*, which in 1884–5 brought a total of 36 lakhs into the royal coffers. In the first two years of the reign of Mindon, the immediate predecessor of Thībaw, a land tax of 12 to 15 annas per acre was levied on rice land, and from 10 to 12 annas per acre on land producing island crops in Sagaing District, but on the introduction of *thathameda* this tax was abolished. In Minbu District under Mindon's predecessor, Pagan Min, the land tax appears to have been heavier in incidence, nearly Rs. 3 per acre in certain cases. King Mindon himself would seem in this District to have introduced a land tax of one-tenth of the produce on all classes of land. In Meiktila the government share of the produce of state land was taken at one-fourth, and the assessment was fixed at Rs. 15 per *pe* (1·75 acres); but there are no signs of any permanency in the revenue system of the Burmese monarchs.

Revenue rates.

Turning now to the actual outcome of the British settlements, we find that the rate levied on rice land very seldom exceeds Rs. 7, or falls below Rs. 1–4 per acre. On *ya* land the rates are lower and do not as a rule rise much above Rs. 1–8, at times being as low as 3 annas per acre. *Kaing* land rates (page 50) vary from Rs. 7 to Rs. 1–4 per acre. Garden land is, as a rule, assessed at lower rates than rice land. Remissions of revenue are granted when crops have been wholly or partially destroyed by flood or drought. These remissions may be either entire or partial, according to the extent of the loss sustained, but are not ordinarily granted unless the loss exceeds one-third of the estimated ordinary full crop of the holding concerned. Temporary exemptions from land revenue are allowed under certain conditions in the case of uncleared land granted or leased by Government for purposes of cultivation. The maximum period of exemption is fifteen years.

Incidence of land revenue assessments.

In 1881 the average incidence of land revenue in its narrowest sense was Rs. 1·7 per head of the population of the Lower province. By the end of the succeeding decade, Upper Burma had been added to the Indian Empire; and the peculiar revenue conditions obtaining there had reduced the average incidence of land revenue proper for 1891 to Rs. 1·2 per head for the whole Province. Since then successive settlements in Upper Burma, coupled with an extension of cultivation that has outstripped the growth of population, have added to the

land revenue to an extent that in 1901 raised the incidence to Rs. 1·9 per head, or above the average for 1881. As *thathameda* is gradually replaced by land revenue in Upper Burma, this figure will tend to rise still further.

The net demand of land revenue proper was 66 lakhs in 1880–1, 94 lakhs in 1890–1, 180 lakhs in 1900–1, and 218 lakhs in 1903–4. The *ywathugyi*, or village headman, is the revenue collector in Burma. He is remunerated by commission varying from 3 to 10 per cent. on his collections.

Capitation tax in Lower Burma.

Capitation tax has been a source of revenue in Lower Burma from the earliest days of British dominion. It does not appear to have been levied by the native rulers, but was introduced soon after the cession of Arakan and Tenasserim in 1826. In 1831 it was fixed at Rs. 5 on married men, Rs. 3 on widowers, and Rs. 2 on bachelors. In 1876 this was altered to a rate not exceeding Rs. 5 for married men, and Rs. 2–8 for widowers of between eighteen and sixty years of age; and it has remained at this figure ever since. In several of the larger towns of Lower Burma a land rate not exceeding one pie and a half per square foot on land covered with buildings and Rs. 3 per acre on land not so utilized is levied in lieu of capitation tax. The capitation tax produced 29 lakhs in 1880–1, 36 lakhs in 1890–1, and 45 lakhs in 1900–1. In 1903–4 the demand was 49 lakhs. Exemptions from the tax are granted to certain classes, such as Government servants and pensioners, village headmen, priests, persons who pay income tax, and the like.

***Thathameda* in Upper Burma.**

The original connexion between *thathameda* and land revenue has been referred to in an earlier paragraph. *Thathameda* was introduced into Upper Burma during the reign of Mindon Min. The origin of the word is doubtful. Various derivations, Sanskrit and other, have been suggested, but none has obtained popular acceptance. In the earliest years of its imposition the incidence of the tax was light; but about 1866, when its origin as a fixed proportion of the cultivator's grain-heap had dropped out of sight and it had become a kind of income tax, it was raised to the level at which it was found when the British took over the administration of the country, namely, at about Rs. 8 to Rs. 12 per household. It was continued by the British Government, and the principle on which it has since been assessed is that a tract enjoying ordinary prosperity should pay a sum not exceeding Rs. 10 per annum for each household that it contains. Rates are not, however, now fixed annually. In settled Districts the rates sanctioned in the Local Govern-

ment's orders on the Settlement Report are levied. In unsettled tracts the normal rate, generally Rs. 10 per household, is assessed. The unit for which rates are fixed is generally the village; and the exact share to be paid by each individual household is determined by village assessors or *thamadis*, who fix the demand above or below the average according to the assessee's means. The average incidence of the tax in 1901 was Rs. 8-8 per household. No maximum or minimum limit has been fixed for individual payments, but in practice these range ordinarily between Rs. 30 and 8 annas. Exemption from *thathameda* is granted to Government servants, the old and infirm, religious mendicants, and a few other classes. Immediately before the annexation of Upper Burma the *thathameda* produced 36 lakhs. The collections of 1890-1 amounted to 44 lakhs, those of 1900-1 to 58 lakhs, and those of 1903-4 to 46 lakhs.

It is generally acknowledged that *thathameda* presses somewhat heavily on the agricultural classes of Upper Burma; and one of the most important features of the existing revenue policy is a scheme the object of which is to retain the total present amount of taxation on non-agricultural incomes unchanged, but so far as possible to ensure that a greater share than heretofore of that taxation is borne by the richer non-agriculturists, and to substitute assessment in the form of acre rates on land for that part of the *thathameda* which represents taxation on income derived from land. This principle is applied at each fresh settlement, and as it is introduced *thathameda* will tend to diminish. It is still, however, and will continue for some time to be, the main source of revenue in the Upper province.

Fisheries. Fisheries both in Upper and Lower Burma contributed towards the revenue of the country before the days of British occupation, and are still one of the most profitable of the assets of the Province. There are two main classes of fishery revenue, the proceeds of leases of fisheries and net licence fees, the greater part of the realizations being of the former class. The fishery area of the Province is not susceptible of any appreciable extension. In spite of this, however, the fishery revenue has increased sensibly during the past two decades. In 1880-1 the total collections amounted to 14 lakhs. By 1890-1 the annexation of the Upper province had raised the figure to 19 lakhs. In 1900-1 the receipts amounted to 23 lakhs, and in 1903-4 to 29 lakhs. The more important of the leased fisheries are in the delta Districts; and the subdivision of

large fisheries, with other improvements in methods of control (largely the outcome of investigations recently conducted by Major Maxwell in the delta areas), have been weighty factors in the increase of late years.

Items credited to miscellaneous land revenue.

Other considerable items classed under land revenue in the larger sense of the term are receipts from water rates, from the duty on oil extracted from the oil-fields, and the rent paid by the Burma Ruby Mines Company. Under this head come also the receipts from birds'-nest and jade-stone revenue. The incidence of land revenue in its broader meaning, which includes *thathameda*, capitation tax, and the other forms of revenue indicated above, was in 1901 Rs. 2-12 per head for Lower and Rs. 2-8-6 for Upper Burma. Comparing this with similar figures for other Provinces, it will be found that the Lower Burma figure is exceeded only by Sind and the Upper Burma figure only by Sind and Berār.

Miscellaneous revenue. Opium.

The existing opium policy of Burma was introduced in 1894. It is the same in the two portions of the Province, but is at two different stages of application. It has as its basis the theory that the drug is exceptionally deleterious in the case of Burmans. In Lower Burma the possession of opium in small quantities up to a certain limit (3 tolas or rather less than 1½ oz.) is allowed in the case of non-Burmans and such Burmans as are registered as having been opium consumers prior to 1894. In the case of non-registered Burmans possession is allowed only in a few special cases, e.g. to tattooers. In Upper Burma, where the object has been to preserve as far as possible the law in force at the time of annexation, registration of Burmans as consumers is not permitted, and, with a few minor exceptions, no Burman is allowed to possess opium. Non-Burmans may possess the drug, as in Lower Burma, up to an individual limit of 3 tolas.

For all practical purposes it may be said that opium is imported and held in bulk solely by Government. Licensed vendors obtain their supplies from Government treasuries and retail it to the actual consumers. The number of licences for the retail vend of opium is strictly limited, and till recently they were sold by auction; but this system has now been discarded in favour of selection by Government on payment of fixed fees, as it was found that the auction system tended to encourage smuggling by the vendors. The taxation of opium, which is derived from a fixed duty per seer (2 lb.) plus vend fees, is very high. The price at which the drug was supplied to the licensees in Lower Burma was Rs. 33 per seer in

1901–2 and Rs. 60 per seer in 1902–3. As already mentioned, only those Burmans are registered in Lower Burma who can show that they became habituated to the drug prior to the introduction of the policy of 1894. The experience of a few years showed, however, that the first list of registered consumers did not contain the names of all persons who might have claimed the privilege of registration; and in 1900 the registers of consumers were reopened, to be finally closed on March 31, 1903. As no person who has acquired the opium habit since 1894 can be registered, the number of registered Burman consumers will in process of time diminish and must eventually altogether disappear. Owing to these restrictions, and to the high taxation of the drug, opium smuggling is rife, and special excise establishments have recently been sanctioned to cope with it. The receipts from opium revenue, which are credited to excise, amounted in 1890–1 to 21 lakhs, in 1900–1 to 27 lakhs, and in 1903–4 to $45\frac{1}{2}$ lakhs.

Opium is not grown in Burma proper, though in portions of the Shan States it is cultivated for local consumption. The Province is mainly supplied from India with Bengal opium. Mālwā opium has been tried, but did not find favour among the opium consumers.

The possession of *gānja*, except in special cases, has been prohibited; the large seizures of the drug that have been made recently show, however, that it continues to be smuggled into the country.

Salt revenue.

Locally made salt, produced along the sea-coast, used, in the years succeeding the second Burmese War, to form a substantial portion of the salt supply of the Province, but has since then yielded to a large extent to the imported article. Indian or foreign salt has long paid duty at the rate of R. 1 per maund ($82\frac{2}{7}$ lb.), to which it was reduced in India proper in 1907. Salt made in the country was formerly taxed by levy of fees on the pans, cauldrons, or other vessels used in boiling it. In 1902, however, a tax of 8 annas per maund on the output was introduced as an experimental measure in two Lower Burma Districts, and this system of taxation has since been extended. In inland Districts the production of local salt is insignificant, and is carried on, under licence, in sterile tracts and in the face of considerable difficulties by the most indigent section of the community. In parts of Upper Burma the industry has approached the border-line of extinction. There are no reliable statistics of the total amount of salt consumed in the Province. In 1900 it was calculated that 794,000 cwt.

of foreign salt passed out of bond, and for the same year the estimated local output was returned at 415,000 cwt.; but a comparison of these totals with the figures of the previous year shows that a portion of the requirements of the year must have been met from stocks held over from the preceding twelve months. The gross salt revenue was $15\frac{3}{4}$ lakhs in 1890–1, $13\frac{1}{2}$ lakhs in 1900–1, and $15\frac{1}{2}$ lakhs in 1903–4.

The imported salt comes for the most part from Germany and England, the former country being the largest supplier, but Aden and Madras salt are beginning to find a market. Salt is exported by land to China and Siam, the amount in 1903–4 aggregating 24,500 cwt. The consumption of salt per head of population in Burma seems to be about 12 lb. per annum, but the matter is obscured by the system of assessment on local salt, and the estimate can at best be only approximate.

Excise revenue (liquors).

The main principles underlying the liquor excise policy of Upper Burma are practically the same as those which have been shown to form the basis of the Provincial opium policy. One of the chief objects aimed at is to keep intoxicating liquor as much as possible out of the reach of the pure Burman, whose inability to refrain from alcoholic excess is notorious. In Lower Burma special restrictive measures for the indigenous population were not introduced when the Province first came under British dominion, and the Lower Burman has thus acquired a certain title to be absolved from exceptional treatment. In Upper Burma, on the other hand, the British have perpetuated the excise policy in force at the time of annexation; and although the Upper Burman cannot be punished for the possession of liquor if it is in quantities below the maximum fixed by the Excise Act, the sale to him of any intoxicant except *tāri* is prohibited, under penalty, by special conditions attached to the licences issued to liquor vendors. The manufacture and sale of spirits and fermented liquor may be carried on only under licences granted by Government, and the prohibition of the sale to Upper Burmans is thus susceptible of enforcement. Persons other than Upper Burmans may possess liquor in small quantities. *Tāri*, the fermented juice of the toddy-palm, stands on a different footing from other intoxicating liquor in Burma. It is generally looked upon as less harmful than other forms of drink, its consumption was more or less countenanced under native rule in Upper Burma, and over a considerable portion of the rural areas of the Upper province there is practically no restriction on its production and consumption. Spirit is manufactured at four private distilleries

organized on the English pattern, where it pays duty at Rs. 6 per gallon, and in parts of the Province in native outstills. *Tāri* and *hlawzaye* are the principal country fermented liquors produced in Burma; but there are other kinds, and in respect of their manufacture the members of some of the backward hill communities have been exempted from the provisions of the Excise law. The Excise Act (XII of 1896) has been extended to a few stations in the Shan States and the Chin Hills. The revenue from liquor in Burma falls under the following heads: (*a*) Customs duty on imported foreign liquor and spirits; (*b*) excise duty on local distillery liquor and spirits; (*c*) licence fees for the sale of local distillery and foreign liquor and spirits; (*d*) licence fees for the manufacture and sale of country spirits; and (*e*) licence fees for the sale of country fermented liquor. Licences to sell are disposed of annually by auction. The net revenue under all heads during the decade 1891–1900 averaged 21 lakhs. In the year 1900–1 the collections were 26½ lakhs, and in 1903–4 33⅓ lakhs. The average incidence of the liquor excise revenue per head of the population was in 1881, 9·3 annas; in 1891, 8·6 annas; and in 1901, 9·2 annas. There is nothing to show that the indigenous liquor-drinker is at all fastidious in his tastes. He is usually content with the form of alcohol that is most readily procurable; but if figures speak aright, he appears of late to be showing a preference for country fermented liquor over country spirits—a tendency which there is no need to deplore. On the whole, local liquor is fairly well able to hold its own against the imported article. The trade returns show that the quantity and value of foreign spirits imported from foreign countries into Burma in 1890–1, 1900–1, and 1903–4 were as follows:—

	Quantity.	Value.
	Gals.	Rs.
1890–1 . . .	154,552	9,87,162
1900–1 . . .	190,074	11,69,984
1903–4 . . .	262,086	16,75,314

Such efforts as have been made by Government to restrict consumption are indicated above. Falling in as it does with the precepts of their religion and immemorial custom, the policy of prohibition meets with universal approval but no active co-operation from the people of the country.

Stamp revenue.

The stamp revenue of the Province is made up of receipts

from (*a*) judicial and (*b*) non-judicial stamps, the former levied under the Indian Court-fees Act and the latter under the Stamp Act. The stamp revenue during the ten years 1891–1900 averaged 16 lakhs. The gross receipts in 1900–1 amounted to nearly 21 lakhs, and in 1893–4 to 29½ lakhs.

The demand for both judicial and non-judicial stamps is affected generally by the prosperity or otherwise of the people of the country, but commercial activity has not always the same effect in the case of both classes of stamps. Thus it was said of the decrease under non-judicial and the increase under judicial stamps in 1893–4 that the 'variations were due to the same causes: namely, depression of trade and tightness of the money market, which impeded the transfer of money and led to litigation for the recovery of the advances made.'

The Indian Income Tax Act, 1886, was extended to Lower Burma in 1888–9, and with effect from April 1, 1905, was brought into operation through the whole of the Lower province; but in Upper Burma it applies only to Government and railway servants, and to the city of Mandalay, where it was brought into force in 1897–8. The tax produced 8 lakhs on an average during the decade ending 1900, and 11 lakhs in 1900–1. Notwithstanding the exclusion of incomes from Rs. 500 to Rs. 1,000 in 1903, the income tax receipts of 1903–4 amounted to 11¾ lakhs. Income tax.

Customs duties are levied, under the Indian Tariff Act (VIII of 1894), on goods brought by sea from foreign countries into the ports of the Province; and there is also a duty on exports of paddy, rice, and rice flour (see Volume IV, chapter viii). This export duty, which brings in a larger revenue than all the varied items of import, is 3 annas per maund of 82$\frac{2}{7}$ lb. Nearly the whole of the customs revenue is credited to Imperial, Provincial receiving only a few minor items, such as warehouse and wharf rents and miscellaneous receipts. Customs expenditure is a wholly Provincial charge. For the ten years 1880–90 the annual receipts from customs averaged 56½ lakhs, and during the following decade nearly 77 lakhs. The actual collections in 1900–1 amounted to 92 lakhs (of which 56 represented export duty on paddy and rice), and in 1903–4 to nearly 1⅓ crores. Customs.

Municipal administration in Burma dates from 1874, when the British Burma Municipal Act became law, and Rangoon, Moulmein, Prome, Bassein, Akyab, Toungoo, and Henzada were constituted municipalities, to be administered by committees appointed by the Chief Commissioner. In 1882 and Local self-government. Municipalities.

1883 the elective system was introduced into all these places except Prome. A certain proportion of the members of each committee was still, however, appointed by Government, and, except in Rangoon, the elections evoked no great interest. In 1883-4 the Act was extended to Pegu. On December 1, 1884, the Burma Municipal Act (XVII of 1884) came into force; and in January, 1885, the eight towns already mentioned, as well as Paungde and Yandoon, were constituted municipalities under it. Between 1885 and 1888 twelve more municipalities were constituted in Lower Burma, but already the discovery had been made that the elective system was not an unqualified success. The new committees were accordingly formed ordinarily of members nominated by the Local Government; and when in 1887 the municipal system was extended to Upper Burma, the Regulation (V of 1887) whereby the necessary legislation was effected provided for the appointment, and not for the election, of members of municipal committees. The elective system now obtains only in nine of the municipalities of Lower Burma and in Mandalay. The Mandalay municipality was constituted in 1887; and by the end of 1887-8 fifteen other municipalities had been established in Upper Burma under the Regulation. Events proved, however, that some of the smaller municipalities then created were not really ripe for municipal administration, and three of them were subsequently abolished. Two new Lower Burma municipalities, those of Letpadan and Gyobingauk, were created in 1894-5, a third (Thonze) in 1897, and a fourth (Allanmyo) in 1900. One of the earliest measures to engage the attention of the Burma Legislative Council in the first year of its existence (1897) was a Municipal Bill. The Lower Burma Municipal Act of 1884 had been adapted, with only a few modifications, from an Act passed for the Punjab; and thirteen years of experience of its provisions had shown that, to suit the requirements of the Province, it needed thorough revision. Steps were accordingly taken to produce an entirely new legislative measure, the Burma Municipal Act (III of 1898). This Act was applicable to Mandalay as well as to Lower Burma, and power was taken to extend it to other Upper Burma municipalities. This extension has been made in eight cases, and proposals for the extension of the Act to the remaining five Upper Burma municipalities have recently been sanctioned.

Constitution of committees and in-

In April, 1905, there were forty-two municipalities in Burma. Two of these (Rangoon and Mandalay) contained over 100,000 inhabitants, 17 more than 10,000 but less than 100,000, and

23 less than 10,000 inhabitants. The average incidence of municipal taxation in 1903–4 was in Rangoon Rs. 6–8–4 per head of population; and in the remaining municipalities of the Province, Rs. 1–10–3 per head. The total number of members of municipal committees in 1904–5 was 543, of whom 161 were *ex officio*, 268 nominated, and 114 elected. In all 160 were Europeans. The president of the Rangoon municipality is an officer of the Burma Commission who devotes his whole time to municipal and town lands matters. In the other municipalities the president is the Deputy-Commissioner of the District or the chief civil officer of the station concerned.

cidence of taxation.

At the close of 1904–5 there were fourteen 'notified areas' administered by town committees who exercise certain municipal functions. These are practically embryo municipalities.

Municipal administration.

Taxes on buildings and lands, lighting and scavenging rates, and taxes and tolls on carts and other vehicles are the most common sources of municipal income; but the real mainstay of municipal revenues in the interior is the sum of the fees derived from markets and slaughter-houses. A water tax is levied in Rangoon, Moulmein, and Prome. Considerable sums are spent annually on conservancy, hospitals, education, and works of a public nature. A special Sanitary Engineer has been appointed to assist municipal committees in preparing schemes for conservancy and water-supply, and it is probable that in the near future the expenditure on water-supply schemes will increase appreciably. The scheme by which Rangoon has till recently been supplied with water from the Victoria Lake north of Kokaing has been found insufficient for the requirements of the rapidly growing population of the city, and a project for a new supply from the more remote Hlawga reservoir has been recently carried out by Government for the municipality. A scheme for supplying Moulmein with water has also been completed by Public Works agency, and a project for water-works for Akyab has been prepared. Prome has water-works which were completed in 1885. Municipal accounts are audited at regular intervals by a staff of auditors under the Inspector of Local Funds Accounts.

Municipal income and expenditure.

The total ordinary municipal income and expenditure of Rangoon and other municipalities in Upper and Lower Burma in 1903–4 is given on the next page, in lakhs of rupees. Particulars of income and expenditure (ordinary and extraordinary) for earlier years are contained in a table appended to this article (p. 155). Omitting the income head 'Loans' and

the expenditure heads 'Water-supply and drainage,' there is little in the figures which calls for comment. In nearly every case a fairly steady expansion has taken place during the twelve-year period covered.

	Income.	Expenditure.
Rangoon	24	21
Other municipalities	25	33
	49	54

District funds.

There are no District or local boards in Burma, but the Deputy-Commissioner of each District has at his disposal a Local fund known in Upper Burma as the District fund, and in Lower Burma as the District cess fund. The income is derived in Lower Burma from a cess on land (levied at 10 per cent. on the land revenue assessments), and in both portions of the Province from ferries, cattle-pounds, markets, &c.; and the Deputy-Commissioner applies the proceeds to the up-keep of minor roads and other local objects, such as rest-houses, cattle-pounds, District post[1], &c. In 1903-4 the total receipts from these funds amounted to 27·2 lakhs, and the total expenditure to 26 lakhs, the main items of outlay being as follows:—

	Rs.
Public works	12,73,000
Education (in Lower Burma)	2,74,000
District post	1,23,000

Public works.

The control of the Public Works department in Burma till 1905 was in the hands of a Chief Engineer, who is also secretary to Government in the Public Works department. Under the Chief Engineer the Province was divided for Public Works purposes into five circles, each in charge of a Superintending Engineer. One of the charges was an Irrigation circle, which included all the Government irrigation works in the Province, while the other four dealt with buildings and roads and other works, excluding irrigation, within their respective boundaries. Each circle consists of a number of divisions in charge of Executive Engineers; the number has not been constant, but there were recently twenty-four buildings and roads divisions and five irrigation divisions. In 1905, in order to cope with the rapidly developing needs of the Province, a second Chief Engineer, a sixth Superintending Engineer for

[1] The District post has now been taken over by the Imperial Post Office.

the charge of an additional buildings and roads circle, and a Sanitary Engineer with the status of a Superintending Engineer were sanctioned and the charges are now being distributed. All public work paid for out of Imperial and Provincial revenues are carried out by the department, which also, when so required, executes work the cost of which is defrayed by municipal, Port, District, or District cess funds.

The statement of Provincial expenditure appended to this article shows that the average annual outlay on public works, ordinary and irrigation, which during the ten years ending March 31, 1890, was less than 25 lakhs, rose during the following decade to 46 lakhs, and that the actual figure for the year 1900–1 was 104 lakhs. Taking all heads (Imperial, Provincial, and Local), the expenditure for the last-named year exceeded 128 lakhs. From Provincial funds nearly 17 lakhs was spent on irrigation, 42 lakhs on public buildings, and 30 lakhs on communications. In 1902–3 the Provincial expenditure aggregated 102½ lakhs, and in 1903–4 the total expenditure in the Public Works department, Imperial, Provincial, and Local, was 139¼ lakhs. The main land and water communications and the principal irrigation works have already been noticed. During the past twenty years Upper Burma has been supplied with courthouses, police stations, military police barracks, jails, and an enormous number of other public buildings; but, with the exception of one or two of the larger jails, no single work of any great importance has been undertaken. Lower Burma at the commencement of this period was well furnished with public buildings of every description, but their number has been very considerably added to since. The recent additions include the present Government House, the Secretariat offices, and the Central jails at Moulmein and Insein. Work has been commenced on the new General Hospital at Rangoon, a project estimated to cost 27 lakhs, and will shortly be begun on the new Chief Court, Currency buildings, Press buildings, and Museum. Designs for extended General Post and Telegraph Offices are under preparation. The work done in the way of lighthouse construction in the past is dealt with in a later paragraph.

Few notable public works have been undertaken by local bodies during the past twenty years save in Rangoon. The principal municipal water-supply schemes that have been executed are referred to in an earlier paragraph under the head of municipalities. Very considerable sums have been spent in the past by the Port Commissioners of Rangoon in the

improvement of the port, and the accommodation for shipping has of recent years been largely increased. Among other works not falling into any of the previous categories may be mentioned the Anglican Cathedral in Rangoon, to which a tower is now being added, and the Roman Catholic Cathedral in the same city at present in course of construction.

Army. For military purposes Burma forms a separate division, directly under the Commander-in-Chief, which was constituted in 1903. The total number of troops stationed within the Province on June 1, 1903, was: British, 3,812; Native, 5,674; total, 9,486. The military stations at present are Rangoon, Mandalay, Maymyo, Shwebo, Bhamo, Thayetmyo, and Meiktila. British infantry are ordinarily quartered at all the stations. British artillery are stationed at Rangoon only, where there is an arsenal. There are volunteer corps at Rangoon, Mandalay, and Moulmein, with detachments at all the principal stations. Their total strength in June, 1903, was 2,419, and about two-thirds were volunteer infantry, the balance consisting of Naval, Artillery, Engineer, and Mounted Rifle Corps. One of the corps (the Burma Railway Volunteer Corps) is composed almost wholly of the staff and employés of the Burma Railways Company.

Marine. There are four Port Officers in Burma, stationed at the ports of Rangoon, Bassein, Moulmein, and Akyab. They are all officers of the Royal Indian Marine. Rangoon possesses in addition an Assistant Port Officer. The Port Officer, Rangoon, is also Marine Transport Officer. At Mandalay there is a second Marine Transport Officer, also belonging to the Indian Marine, who is responsible for the working of the Government flotilla in the inland waters of Upper Burma. The Deputy-Commissioners of Kyaukpyu, Tavoy, and Mergui have been appointed Conservators of their ports. A sea-going steamer of the Royal Indian Marine is stationed at Rangoon for lighthouse and other duty. Three Indian Marine river steamers ply on the inland waters of the Province, and a fleet of 66 launches is employed for Government transport work. These latter are practically all in charge of native *serangs*. Pilots, whose licensing and control is provided for by the Lower Burma Pilots Act (XII of 1883), are employed for the navigation of vessels in the ports of Rangoon, Moulmein, Akyab, and Bassein. The strength of the service at the end of 1905 was as follows: Rangoon, 17 ordinary and 4 special pilots; Moulmein, 6 ordinary and 2 special pilots; Akyab 2, and Bassein 4 pilots. The pilots are of four grades in Rangoon and of

three grades in Akyab and Bassein, and are paid by fees proportioned in each case to the draught of the vessel piloted. There is a special river surveyor in Moulmein. The Port Officer, Rangoon, is Superintendent of lighthouses for Burma. The following lighthouses are maintained :—

Light-houses.

Off the coast of Akyab District: Oyster Island, first lighted with a permanent light in 1892[1]; and Savage Island, at the mouth of Akyab harbour, constructed in 1842.

Off the coast of Bassein District: Alguada, on the Alguada Reef, due south of Cape Negrais, constructed in 1865.

Off the coast of Hanthawaddy District: China Bākīr, lighted in 1869 and re-erected in 1901; Eastern Grove, at the mouth of the Rangoon river, constructed in 1869; and Table Island, two miles from the Cocos Islands, erected in 1867.

Off the coast of Amherst District: Double Island, south of the entrance to the Salween, constructed in 1865; and Green Island near Amherst Point, also at the mouth of the Salween, constructed in 1903.

Off the coast of Tavoy District: Reef Island, at the entrance to the Tavoy river, constructed in 1883.

The construction of a lighthouse on Beacon Island, 4 miles north of Cheduba Island, is under consideration.

Light-vessels are stationed off the Baragua Flats and the Krishna Shoal, south of the mouths of the Irrawaddy; and at the spit in the mouth of the Rangoon river.

Police and jails.

The Police department in Burma is administered by an Inspector-General and three Deputy-Inspectors-General, two for civil and one for military police. There is also a special officer in charge of police supply. The civil police force may be said to have been first regularly organized in 1861, when the Indian Police Act (V of 1861) came into force. A Superintendent of police was appointed for each District of the Province as it then existed, and was made immediately subordinate to the Inspector-General in Rangoon. The whole force then numbered 6,100 and cost 12 lakhs a year. In 1881 it consisted of 6,853 officers and men, and its cost had risen by over 2 lakhs. The disturbed state of the country about the time of the annexation of Upper Burma, and the necessity for the protection of the newly acquired territory, occasioned a large increase to the force; and by 1891 the strength of the civil police in both sections of the Province had risen to nearly 16,000. For a short time, while the police force of Upper

Civil police.

[1] The Oyster Island Light took the place of a lighthouse on Oyster Reef, which was built in 1876 and swept away by a cyclone in 1884.

Burma was being organized, a special Inspector-General was appointed for the Upper province. Since 1891 the total of civil police has been reduced. The policy of curtailment began in 1892, and by 1895 the strength of the force had been lessened by more than 2,000 and brought down to its existing proportions. In 1901 the force was 12,879 strong, or in other words there was in Burma proper one civil policeman to every 13 square miles and to every 718 of the population. The strength and cost of the force in 1881, 1891, 1901, and 1903 are given in a table at the end of this article (p. 156).

Except in the superior grades and in urban areas the members of the force are recruited from Burmans, Talaings, Shans, and other indigenous races. The service is not popular, for the discipline that enlistment in the force entails is disliked by the men. As detectives the Burmese police are on the whole successful, but in matters of drill and the like they are not to be compared with the police of India proper. In 1888 a Committee was appointed to investigate the state of the police and to devise means for placing it on a more satisfactory footing. The main outcome of its recommendations was the division of the Lower Burma force into civil and military police, and the establishment at the head-quarters of Districts of police schools at which recruits and other members of the force receive systematic training. In 1891 the beat patrol system was inaugurated in the rural areas of the Province, and has been found to work satisfactorily. In 1899 the Rangoon Police Act came into force, and from the date of its enactment the Rangoon town police has been administered by a special Police Commissioner on a somewhat different footing from the rest of the force. It has occasionally been found necessary to invoke the aid of section 15 of the Police Act, and to station punitive police in specially criminal or ill-affected areas, making the cost of their maintenance a burden on the local residents. For several years after the annexation the annual total of punitive police did not fall below 1,000, but till quite recently none has been required since 1896. There is a special finger-print or criminal identification department in Rangoon which, since 1898, has carried on the system of identifying criminals by means of finger impressions. References are made to it from the Districts, and it has been the means of tracing a considerable number of previously convicted prisoners. At present the majority of the civil police are armed with *das* (sword-knives) and smooth-bore muskets, but arrangements are being made to substitute Martini-Henry smooth-bore carbines.

The Burma District Cesses and Rural Police Act (II of 1880) created a rural police for Lower Burma, the officers appointed under the Act being known as *kyedangyis* and *yazawut gaungs*. The Lower Burma Village Act (III of 1889) superseded this enactment so far as the constitution of the rural police force was concerned. Under the latter Act, petty officials known as ten-house *gaungs* have been appointed to be rural policemen in Lower Burma, and have been invested with the powers and privileges of police officers. The office of *gaung* in charge of ten houses was a well-recognized feature of village administration in Burmese times. Ten-house *gaungs* are not paid, but their duties are exceedingly light and their office gives them a certain standing. There are no rural police in Upper Burma, but in both Upper and Lower Burma the village headman has been empowered to search for and arrest any person who is liable to be arrested by a police officer in any of the circumstances mentioned in section 54 of the Criminal Procedure Code. The relations between the regular and rural police are in the main very satisfactory. The village headmen have petty magisterial functions and some of them receive enhanced powers. They also collect the revenue. Rural police.

The military police in Burma may be said to have had their origin in the disorder that followed on the annexation of Upper Burma. In 1886, with a view to supplementing the work done by the troops, proposals were submitted to the Government of India for the enlistment of about 3,500 military police. Out of this nucleus grew the military police force of the Province, which in 1888 consisted of 19 battalions, numbering 17,880 men in Upper Burma, with a further force of 1,000 men in Lower Burma. The force was formally established under the Upper Burma Military Police Regulation in 1887. This enactment was superseded during the same year by the Burma Military Police Act, which created a military police for Lower Burma and incorporated it with the Upper Burma force. The rank and file of the military police consists almost entirely of natives of India, each battalion being commanded by officers of the Indian Army. The officers of the Upper Burma battalions are termed Commandant and Assistant Commandant; those of the two Lower Burma battalions, Adjutant and Assistant Adjutant. Since 1888 the force has been gradually reduced in strength (the battalions on disbandment being frequently formed into local regiments), and at the close of 1901 consisted of 15,053 men, distributed over ten battalions in Upper, and two battalions in Lower Burma. At Military police.

the end of 1903 the total was 15,062. The force is armed with Martini-Henry rifles. The military police took the principal part in the pacification of the country, and their work now consists, for the most part, in garrisoning posts and performing guard and escort duty. They still form, in fact, a supplementary military force and take no share in the detection or prosecution of offences. The force includes some Kachins and Karens. At one time the latter formed a separate battalion, but a riot that occurred in its ranks in 1899 led to the distribution of the companies forming it among other battalions. Half a company of the recently formed Southern Shan States battalion is composed of Shans.

Railway police.

The railway police force was organized in 1890 and is in charge of a specially selected Superintendent. In 1899 it was reorganized and its strength somewhat reduced, but since then there have been slight increases. In 1903 the strength of the force was 93 officers and sergeants and 275 men, and the total of true cognizable cases disposed of was 619.

Crime dealt with by the police.

The main statistics of cognizable crime during the five years ending 1901, and in 1903, are given below:—

	Average of five years ending 1901.	1903.
Number of cases reported	57,072	57,051
Number of cases decided in the criminal courts .	36,921	35,862
Number of cases ending in acquittal or discharge	8,855	8,892
Number of cases ending in conviction . .	28,066	26,970

Jails.

The Jail department in Burma is under the control of an Inspector-General of Prisons, who belongs to the Indian Medical Service. There are three separate Jail Superintendentships, Rangoon, Insein, and Mandalay. Other jails are in charge of the Civil Surgeon or the senior medical officer at the station where the jail is situated. In 1881 British Burma possessed 2 Central jails, 6 District jails, and 6 lock-ups administered by the Jail department; and the number of prisoners in confinement at the close of that year was 4,461. By 1891, the number of prisons in the Province had risen to 30. Six of these were Central jails, 21 District jails (nearly all at the head-quarters of Districts), and 3 lock-ups. The accommodation in that year was for nearly 13,000 prisoners, and by December 31 the actual total admitted had been raised, by the disturbances that followed on the annexation of the Upper Province, to 11,557. During the two following years the number of prisoners remained at about the same level, but in

1894 there was a sudden rise to 13,625, and at the end of 1896 the highest total yet attained for Burma (14,336) was reached. The year 1897 was marked by Jubilee remissions; the jail population fell to 12,886; and since then the decline has continued almost uninterruptedly. In 1901 the total of jails was 32 (6 Central and 26 District), and the jail population at the end of the year was 11,731, a lower figure than for any year since 1891. The corresponding figure for 1903 was 11,669. During the early portion of the last decade there was congestion in some of the prisons which, in the circumstances of the case, was unavoidable. In 1901, however, there was accommodation for 14,648 prisoners, or for nearly 3,000 more than had actually to be housed at the end of the year, and such overcrowding as occurred was local only and was susceptible of immediate relief. The total of jails in 1903 was the same as in 1901 (32), with accommodation for 16,599 prisoners.

A table appended to this article (p. 156) gives the main statistics regarding the jails of the Province. It will be seen that the rate of jail mortality has fallen during the past twenty years from 44 to 15 per thousand. Admissions to hospital have declined from over 900 per mille of average population in 1881, and nearly 900 in 1891, to 547 in 1901 and 474 in 1903. These data speak for themselves of the progress made during the past two decades in the sanitary administration of the jails. The manufacture of furniture and the cultivation of vegetables are two of the most important jail industries of the Province, and, so far as green food is concerned, the prisons are practically self-supporting. Wheat-grinding for the military police is carried on extensively, and as much use as possible is made of convict labour in the manufacture of articles required by Government departments. A branch of the Government Press is located in the Rangoon jail. With the exception of carved wooden furniture, practically no products of jail labour in Burma leave the Province. The profit on jail manufactures is, as will be seen from the table already referred to, considerable. It was lower in 1901 and 1903 than in 1891, owing to a more rigid enforcement of the rule which prohibits the sale to the public of jail manufactures at prices below the ordinary market rate.

Reformatories.

A juvenile reformatory at Insein, a few miles out of Rangoon, was opened in December, 1896, taking the place of the reformatory which had till then existed at Paungde, a station in Prome District on the railway line. In April, 1899, it was

transferred from the control of the Inspector-General of Prisons to that of the Director of Public Instruction. It had 96 inmates at the end of 1901, and 82 on December 31, 1903.

Education. General organization.

On the annexation of Lower Burma the British found an almost unique system of vernacular education ready to their hand throughout their newly acquired possession. The *kyaungs* or monasteries were the schools, and the *pongyis* or monks the teachers, while the taught embraced the whole of the male population of the country, for custom then, as now, demanded that every Burmese Buddhist male, from the highest to the lowest, should pass some portion of his youth in a religious seminary. The tuition given in these indigenous schools was not of the profoundest; but including, as it did, reading, writing, and the rudiments of arithmetic, it was not to be despised, and, apart from its intrinsic worth, it was of value as forming a parent stem on which Western educational methods could be grafted. This process of grafting was first systematically carried out by Sir Arthur Phayre in 1866. An Educational department, with a system of grants-in-aid, had been in existence in Burma for many years previously, but it was then placed on a sound footing. The attention of the newly appointed Director of Public Instruction was directed to supervising and fostering the scheme for spreading vernacular education through the *kyaungs* or Buddhist monasteries in Rangoon and Moulmein; and the principle of adapting the existing indigenous agency for the diffusion of primary education has since then occupied the foremost place in the educational policy of the Province, Upper Burma having been included in the Educational department's sphere of action in 1889–90. Missionary schools are now plentiful, and lay schools both public and private abound; but the bed-rock of vernacular education in Burma is still monastery teaching, and with it is intimately bound up the educational welfare of the people.

Regarded from a purely departmental point of view, education in Burma falls under two main heads, vernacular and Anglo-vernacular, the latter being carried on wholly under the supervision of the Government Educational authorities. The former is only partially supervised, for a large number of the monastery schools have not yet conformed to the rules of the department and sought registration. Non-registered schools obtain no assistance from Government, but schools which have been registered and have submitted to Government inspection are helped with grants of various kinds.

As at present constituted, the inspecting staff of the Educa-

tional department in Burma consists of a Director of Public Instruction, 4 Inspectors of schools, 4 Assistant Inspectors, 44 Deputy-Inspectors, and 1 Sub-Inspector. The Director and the Inspectors are members of the Indian Educational Service, with a British University training, and are appointed in England by the Secretary of State. The Assistant, Deputy, and Sub-Inspectors are recruited in the country, and are ordinarily Burmans, Karens, or Talaings. The Deputy-Inspectors have, as a rule, the educational charge of a civil District and confine their attention to vernacular education, but neither they nor any of the other members of the inspecting staff undertake any direct instruction. The teaching staff of the Educational department consists of the masters of the Government schools (high, middle, normal, &c.) in the Province; but it is comparatively small, for one of the cardinal principles kept in view has been that Government should 'ordinarily not establish and directly manage schools and colleges of its own, but should inspect, regulate, and assist schools established and managed by private persons or associations.' The greater part of the tuition is thus given by non-Government teachers. To spread elementary education, however, and to assist such persons as are anxious to have their schools registered by the department, or to raise their grade, a staff of itinerant teachers is maintained by Government. Measures have also been taken to facilitate the appointment of pupil-teachers for small and struggling institutions needing special assistance of this kind. These teachers are examined yearly and undergo a practical training at a normal school. In Lower Burma municipalities and committees of 'notified areas' have the general control of educational affairs within their jurisdiction, subject to the rules laid down in the local Education Code; in Upper Burma the control of municipal and town schools rests directly with the Educational department. In Lower Burma education is one of the objects on which District cess fund money may be spent, but the District funds of Upper Burma cannot be thus applied.

Collegiate education.

All education, whether vernacular or Anglo-vernacular, falls under one or other of the three heads, collegiate, secondary, or primary. Burma as yet possesses no separate University, and up to 1894 the Rangoon College was the only college. That institution was developed from the Rangoon High School in 1881; and in the following year the Educational Syndicate, a body constituted for the purpose of conducting examinations, and for advising the Local Government regarding certain

standards of instruction in Lower Burma, came into being. It had at first no corporate existence; but in 1886 it was formally incorporated under the Registration of Societies Act, and it managed the Rangoon College till 1904 and the High School till 1902. Both these institutions are now under the control of the Educational department. The college is of the first grade. The Baptist College, which was registered as such in 1894, is a second-grade aided college at Rangoon. The expenditure on the Rangoon College in 1904 was Rs. 48,150; that on the Baptist College was Rs. 16,200. Both colleges are affiliated to the Calcutta University. Below are given certain particulars regarding the University work of these colleges for the years 1891[1], 1901, and 1904:—

Passes in	Rangoon College.			Baptist College.	
	1891.	1901.	1904.	1901.	1904.
Matriculation	21	30	18	8	11
First or Intermediate in Arts or Science	5	22	16	1	2
Ordinary Bachelors' degrees . .	1	6	7	...	...

A college attendance of four years is required for the attainment of the B.A. degree. Two of these are spent in the F.A. (First Arts) and two in the B.A. section. In 1904 there were 194 students at the two colleges, of whom 5 were females. Hostels for boarders are attached to both institutions. Owing to the absence of caste, the hostel system presents fewer difficulties in Burma than in other Provinces, and it exists to a considerable extent in connexion with the primary and secondary schools also. The hostels (of which there were 115 in 1904) are popular, and proposals for enlarging and extending them are constantly being received by the Educational authorities.

Secondary education (male).

In 1881 Lower Burma possessed 7 high schools and 23 middle schools for boys, with 166 and 950 pupils respectively. In 1891 the Upper and Lower Burma figures combined had risen to 9 high schools with an aggregate of 2,890 male pupils, and 58 middle schools with 5,135 male pupils. The increase is noteworthy, but it was less than the rise which took place in the succeeding ten years. In 1901 the 15 high schools for boys in Burma had a total of 5,335 male pupils; 3 were managed by Government, 3 by municipal committees, and 9 by private bodies (aided). In the same year there were 281

[1] Here, as elsewhere in the Education paragraphs, 1891, 1892, &c., means the official year 1890-1, 1891-2, &c.

middle schools for boys with 18,858 male pupils. Twelve of these schools were managed by municipal committees, the rest (269) by private bodies (aided). There were two vernacular high schools in 1901; of the 281 middle schools 225 were vernacular and 56 Anglo-vernacular. In 1904, 21 high schools for boys had 7,432 male pupils; and 325 middle schools for boys (of which 265 were vernacular) had 23,182 male pupils. Of the high schools 5 were managed by Government, 3 by municipalities, and 13 by private bodies. There are no unaided secondary schools in Burma. Aid is given in the shape of results grants for pupils who have passed examinations, and grants for building, equipment, and maintenance, and for salaries to certificated teachers, &c. Of the male population of the Province of school-going age (taken at 15 per cent. of the total) 3 per cent. were under secondary instruction in 1901.

Primary education (male).

Primary schools teach the lowest standards, from the first to the fourth inclusive. They may be vernacular or Anglo-vernacular, but there are very few of the latter. Vernacular primary schools are in some cases under missionary control; but the great majority are carried on by non-Christian private individuals, monastic and lay, who draw grants from Government or municipal funds, if they come up to the standard prescribed for registration and conform to the grant-in-aid rules. These are known as public schools. All which do not conform to the rules and have no desire to be inspected by the department are private institutions.

The condition of public male primary education in the Province in the years 1881, 1891, 1901, and 1904 is indicated in the following statement:—

	1881.	1891.	1901.	1904.
Boys' schools . .	3,210	5,602	3,850	4,529
Pupils . . .	80,977	103,299	99,042	111,462

Of the 4,529 primary schools open in 1904, all but 5 were under private management; of the 5 exceptions, 4 were managed by Government and the remaining one by municipal authorities. The total of male pupils under primary instruction in public institutions in 1901 was 12 per cent. of the total males of school-going age in the Province.

A survey of primary education statistics (male) during the past twenty years shows fluctuations so marked as to demand a word of explanation. The high-water mark may be said to have been reached in 1885–6, when Lower Burma alone had

5,102 public boys' schools with 133,408 pupils. Various causes, of which the annexation of Upper Burma was at the time regarded as the most vital, combined to reduce the figures of subsequent years. In 1888–9 the number of schools had fallen to 2,750 and that of pupils to 69,105, and even the inclusion of the Upper Burma data in the following year failed to bring the figures for the whole Province into line with the Lower Burma total for 1885–6. Matters improved after 1888–9; but from 1891–2 onwards there has been a falling off, which has brought the average of the five years ending with 1900–1 down to a level no higher than that of the Lower Burma average of twenty years ago. The fact appears to be that formerly Deputy-Inspectors were apt to place on the departmental registers schools that were really unqualified for registration, so that we may regard the latest figures, the result of successive years of elimination of the unfit, as a truer picture of the state of public primary education than that afforded by the opening years of the two decades under review. It may be laid down as a general proposition that in Burma the extension of primary vernacular education is limited only by the amount of money available for its development: in other words, that, wherever additional funds are judiciously applied and new schools are opened and equipped, there will, in existing circumstances, be an unfailing supply of new scholars to fill the schools and benefit by the money spent.

Whatever may have been the factors that have brought about the reduction in the total of public primary schools, there has been no falling off in the aggregate of unregistered monastic institutions. Growth of population, the transfer of schools from the registered to the unregistered list, and a more thorough system of recording non-departmental data have, in fact, sent up the totals to a very marked extent. The following are the figures for 1891, 1901, and 1904 in respect of private primary schools, the majority of which are *pongyi kyaungs*:—

	1891.	1901.	1904.
Boys' schools . .	5,007	13,036	14,065
Pupils . . .	38,016	144,321	155,588

It will be seen therefore that more than half the education of the country is carried on by the wearers of the yellow robe independently of the Educational department. Teachers in public primary schools have to qualify by the primary grade, and undergo other tests which involve a training of two years

for vernacular and three for Anglo-vernacular tuition. The pay of such teachers varies very considerably, but ranges ordinarily between Rs. 20 and Rs. 100 a month. Rs. 20 is the salary fixed for fifth-grade and Rs. 60 for first-grade certificated assistant-teachers appointed by the department. The pay and position of teachers has improved of late years; but the service is still far from popular, and is often used merely as a stepping-stone to more lucrative employment under Government.

The whole Provincial vernacular system is framed to suit the convenience of children belonging to the agricultural classes. The attendance required during the year is reduced in their case, and their presence is not enforced while work in the fields is necessary.

Female education in Burma has been advancing steadily. The following table shows the totals of public secondary and primary girls' schools, and of the pupils attending them, in the years 1881, 1891, and 1904:— Female education.

Year.	Schools.		Pupils.	
	Secondary.	Primary.	In Secondary schools.	In Primary schools.
1881 .	6	12	131	6,316
1891 .	16	108	1,579	14,758
1901 .	33	286	5,807	28,596
1904 .	46	396	7,159	35,301

These figures exclude the totals for training schools (6 institutions with 191 female pupils in 1904) and other special schools (13 institutions with 361 pupils). Five girls were in 1904 attending college. Both B.A. and F.A. passes have been secured by female students, and in 1904 thirteen girls passed the matriculation. The grand total of girls under instruction in 1904 was 47,466, of whom 3,449 were in private elementary schools not inspected by the department. The smallness of the last number, as compared with the corresponding figure for boys, is due to the fact that the indigenous Buddhist system provides no facilities for the education of girls. A virtuous woman will, it is held, receive her reward by reincarnation as a male and her instruction can therefore be held over to that stage. Nevertheless many Burman women are much more competent than their husbands in matters of business. The total of girls under instruction was in 1881, 2·5 per cent., in 1891, 3·3 per cent., and in 1901, 5·6 per cent. of the total female population of school-going age. The public girls'

schools of the Province are all aided schools under private management. The curriculum differs little from that of the boys' schools, but a few optional subjects, such as needlework, hygiene, and domestic economy, are taught only to girls. Except to a small extent in Arakan, the *zanāna* system does not exist among the indigenous females of Burma, and accordingly no special difficulties, such as those met with in India proper, are experienced in consequence of the seclusion of the sex. The missionary bodies have done good work in furthering female education.

Special schools.

There were 3 normal schools in 1881, 4 in 1891, and 10 (5 for training masters and 5 for mistresses) in 1901. This last total has since been increased by four. The total of normal-school pupils in 1904 was 395 males and 191 females. The Province possesses no special law school, but a law class is attached to the Rangoon College, which in 1904 had an attendance of 36 students. It was first opened in 1892. An Engineering school at Insein near Rangoon trains youths for the subordinate branches of the Public Works department, and had 32 pupils on its rolls in 1904.

No industrial schools, properly so called, have as yet been opened in Burma. Instruction in certain industries, however, such as weaving, printing, and carpentry, is included in the curricula of a few schools. Medical training is given to female students at the Dufferin Maternity Hospital in Rangoon. A vernacular Forest school has been established at Tharrawaddy, which receives private pupils as well as Forest subordinates for training, and a Veterinary school at Rangoon. There is as yet only one recognized class, also at Rangoon, for imparting commercial instruction. The study of Pāli, the sacred language of Burmese Buddhism, is fostered by a yearly examination known as the *patamabyan*, at which monks and laymen appear and for which certificates of various classes are granted. Mention may be made here of the school at Taunggyi, in the Southern Shan States, for the sons of Shan chieftains.

The education of backward indigenous communities is a matter that has occupied the attention of the religious bodies ever since missionary work was started in Burma. Anglicans, Baptists, and Roman Catholics have been engaged for many years past in educating the Karens, while of late schools have been started for Kachins and Chins, who, like most of the hill tribes of the Province, have no indigenous educational system of their own.

In 1904 there were 33 educational institutions for Europeans and Eurasians, with an aggregate of 3,298 pupils. The passes gained at the principal examinations by European and Eurasian pupils from all classes of schools during the same year were as follow: B.A. 3, F.A. 2, Matriculation 25, Middle 432, and Primary 1,149. A large proportion of the European scholars enter Government service after leaving school. Others seek occupation on railways or in mercantile offices, while a certain number adopt the legal profession.

European and Eurasian education.

In 1891 the Province contained 24 registered Musalmān schools, with 595 pupils, in Lower Burma, and one school, with 36 pupils, in Upper Burma. Of the Lower Burma institutions all but one were in Akyab District, in which alone the Musalmāns form a substantial proportion of the population. In 1901 there were 45 Muhammadan public schools in the Province as a whole, and in 1904 the number was 86. The attendance at these institutions in the last-mentioned year was 2,605. Education in these schools is chiefly confined to the lower primary stage. The number of Muhammadan pupils in all the public educational institutions of Burma, Musalmān and non-Musalmān, in 1891, 1901, and 1904 was as below:—

Muhammadan and Hindu education.

	1891.	1901.	1904.
Arts colleges . . .	1	5	9
Secondary schools . .	523	1,263	1,747
Primary schools . .	1,426	2,227	3,902
Special schools . .	33	29	34

In public institutions the aggregate of Muhammadan pupils is higher than that of Hindus, but the excess is roughly proportionate to that of the Musalmān over the Hindu population of the Province. The figures given above do not, however, take account of the non-registered Korān schools, which in 1904 numbered 254 with a total of 4,757 scholars. If private institutions are included, the total of Musalmāns under tuition in 1904 (10,475) was more than treble that of Hindus (3,076).

The Government has laid down a minimum rate of fees for all Anglo-vernacular schools in Burma. The rate is Rs. 4 a month for high school, Rs. 3 for middle school, Rs. 2 for upper primary, and R. 1 for lower primary pupils. Collegiate fees range from Rs. 9 to Rs. 5. A certain number of aided schools charge a uniform fee of Rs. 3. The following state-

Educational finance.

ment exhibits the main statistics connected with Educational finance for the year 1903-4, in thousands of rupees :—

	Expenditure on institutions maintained or aided by public funds from			
	Provincial revenues.	District and municipal funds.	Fees and subscriptions.*	Total.
	Rs.	Rs.	Rs.	Rs.
Arts and Professional colleges	36	...	29	64
Training and special schools .	1,12	4	24	1,40
Secondary boys' schools . .	1,75	1,71	4,34	7,80
Primary boys' schools . .	1,16	2,47	29	3,92
Girls' schools	35	55	1,07	1,98
Total	4,74	4,77	6,23	15,74

* Exclusive of endowments and other private sources.

The total of Government scholarships given during the same year amounted to Rs. 27,400.

General educational results.

Successive enumerations have established the fact that the average of education in Burma is high. By this is meant not that the Burman is as a rule well educated, for this is very far from being the case, but that the Province can show a higher proportion of persons (both males and females) able to read and write than any other part of India. In 1901 it was calculated that of every five persons then living in Burma one individual would be able to read and write some language, and would thus be literate for the purposes of the census enumeration. In four Districts of Upper Burma—Upper Chindwin, Minbu, Shwebo, and Magwe—there were in 1901 actually more literate than illiterate males, and for the Province as a whole the average of males able to read and write was 378 per thousand. The corresponding figure for literate females was only 45 per thousand, which is still, however, far higher than in any other Province, while in Rangoon more than 26 per cent., and in Hanthawaddy more than 10 per cent., of the female population were able to read and write. In the same year 6 males in every thousand and one female in every thousand were literate in English. Use has been made of the census figures to calculate the proportion borne by the total of children under tuition to the total of children of school-going age. For the purposes of this calculation the population of school-going age is taken as 15 per cent. of the total. On this basis the population under tuition in Burma was in 1881, 16 per cent., in 1891, 21 per cent., and in 1901,

22 per cent., of the total population of school-going age. Comprising as this does the figures for females as well as for males, the percentage is high for the East.

The total number of newspapers published in Burma in 1903 was 26; of these 16 were published in English, 8 in Burmese, and one each in Gujarāti and Tamil. There are two important English dailies, the *Rangoon Gazette* and the *Rangoon Times*. The *Friend of Burma* and the *Burma Herald* are Burmese dailies with a somewhat smaller circulation. None of the Burma journals can be said to be actively political, and none printed in English or Burmese is addressed to any special class of the reading public. The Gujarāti and Tamil newspapers are more or less the mouthpieces of the Bombay and Madras residents of Burma. The American Baptist Mission Press issues a number of weekly and monthly periodicals, which are, however, wholly religious. The Press.

The totals of publications registered in Burma in 1902 under the Printing Presses and Books Act was 123. In 1903 the total had risen to 146. The majority of these are, as a rule, in Burmese or Pāli-Burmese, and are for the most part religious treatises. The number of dramatic works is generally large. Educational publications, on the other hand, are relatively few, and, except in the matter of philology, original research is lacking. Registered publications.

The Medical department in Burma is controlled by an Inspector-General of Civil Hospitals. Each civil District, except Northern Arakan and Salween, is under the medical charge of a Civil Surgeon, who is stationed at the District head-quarters (Rangoon has three officers of this class); and there are also Civil Surgeons at Taunggyi, Lashio, Falam, and Maymyo. Assistant-Surgeons are stationed at the head-quarters of the Northern Arakan and Salween Districts and elsewhere, and a large staff of Hospital Assistants does duty in the District head-quarter hospitals or in charge of the minor subdivisional and township dispensaries. The main figures regarding the hospitals are given in a table appended to this article (p. 157). Medical.

The number of hospitals and dispensaries rose from 27 in 1881 to 119 in 1901 and 134 in 1903. Of these the most important are the hospitals at Rangoon, Akyab, Moulmein, and Mandalay. The Rangoon hospital was opened in 1854, in a wooden building on its existing site. In 1872 the present building was erected at a cost of nearly a lakh, and it has been added to very considerably since then. A new general hospital is now under construction. In 1868, the first year for which figures Hospitals and dispensaries.

are available, the total of patients treated was 9,555. In 1891 the corresponding figure was 52,605, and in 1903 it was 64,596. The number of beds now available is 483, of which 425 are for males. Prior to 1902 the cost of the hospital was met for the most part by the Rangoon municipality; since then it has been maintained from Provincial revenues. The establishment of the Akyab hospital dates from the annexation of Arakan after the first Burmese War. A new hospital was built in 1879 and has been added to from time to time, as occasion required. The patients treated in 1891 and 1903 numbered 15,712 and 16,877 respectively. The hospital is supported for the most part from Local funds and accommodates 114 in-patients. The first civil hospital in Moulmein was started soon after 1840. The existing hospital was built, practically upon the site of the old one, in 1877, and since 1881 it has been a municipal institution. Its present accommodation is for 84 male and 16 female in-patients. The total number of patients treated was 13,091 in 1891, and 15,864 in 1903. The date of construction of the existing Mandalay hospital was 1891, though accommodation for patients had been provided in a temporary building from 1888. In 1887-8 the attendance at the hospital was 3,948 patients. This figure had risen in 1903 to 19,753. The hospital is a municipal institution. The table above referred to shows that Local funds contribute the greater part of the money for hospital maintenance in Burma. The expenditure under this head more than doubled during the period 1889-1901. The Province has 4 leper asylums, 2 in Mandalay and one each in Rangoon and Moulmein.

There is a lunatic asylum in Rangoon. It was built in 1872 and opened with a population of 151, which has since risen to over 400. The asylum buildings were largely extended between 1894 and 1898.

Vaccination.

Inoculation is carried on extensively in Burma, being preferred to vaccination by the Burmese, especially by the illiterate, under the mistaken belief that, while vaccination requires to be repeated every few years, inoculation protects for a lifetime. Inoculators have been employed as vaccinators, but have invariably been found to give way to popular prejudice and to resort to their old system of inoculation, which they find more paying.

Vaccination is being pushed on throughout Burma, and in recent years has been extended to the Shan States and the Chin Hills. It is compulsory in nearly all the municipalities and cantonments of the Province. The main statistics are

given in a table appended to this article (p. 157). There seems reason, however, to question the accuracy of the figures of successful operations, and the extent to which the population is protected against small-pox cannot be accurately estimated.

Sale of quinine.

A scheme for facilitating the sale of quinine in pice packets in rural areas was brought into operation towards the close of 1895. The results were at first not encouraging, but in 1903 the sales reached a total of 3,250 packets, equal to 1,758,000 grains. The quinine is sold at post offices, and by vaccinators, village postmen, and village headmen.

Village sanitation.

Rules providing for village sanitation are issued under the authority of the Village Act and Regulation by Commissioners of Divisions, and volumes known as the Permanent Sanitary Record and the Village Sanitary Inspection Book are maintained for the more important villages of the Province. The total amount expended from District cess and District funds on rural sanitation in 1903 was Rs. 1,60,000.

Surveys. Cadastral, topographical, and other surveys.

Parties of the Survey of India are employed in Burma in connexion with the cadastral, the topographical, and the Forest surveys. Of these the most valuable from an administrative point of view is the cadastral survey, which plays an important part in the assessment of land revenue. The system adopted is that of a connected theodolite exterior survey and a field-to-field interior survey. The country to be surveyed is divided up into polygons, each of which consists of so many *kwins*, areas ordinarily from 1 to 1½ square miles in extent, enclosed as much as possible within natural boundaries, and corresponding in many ways to the *mauzas* of Northern India. The unit of survey is the field, an area of cultivated land ranging ordinarily between an acre and a quarter of an acre, included within well-defined boundaries. The greater part of the cultivated area of Lower Burma and also of Upper Burma has been cadastrally surveyed. The cadastral record prepared by the Survey of India is kept up to date by the Provincial Land Records department, the alterations and extensions in cultivation, ownership, topography, &c., being annually shown on fresh copies of the maps. The area in which this system of supplementary survey was carried on in 1903-4 was in all nearly 42,000 square miles; and the Lands Records staff at that date consisted of a Director of Land Records, an Assistant Director, 27 superintendents of land records, with 7 probationers, 105 inspectors, and 1,058 surveyors. So far the supplementary survey system has been introduced into most of the Upper Burma Districts. Records-of-rights and occupations are prepared by the settle-

ment officer and are kept up to date by the officers of the supplementary survey, changes of ownership being registered in Lower Burma by surveyors and in Upper Burma by village headmen. In unsettled Districts no record-of-rights is maintained. The subordinate Land Records staff is recruited from the Government survey schools. At the close of 1903–4 there were 18 such schools in the Province with 452 pupils. Village headmen, on whom the collection of the revenue devolves, are encouraged to send their sons or other relatives likely to succeed them in office to the survey schools, and in the Upper Burma schools the majority of the scholars are youths of this class. Forest surveys are made with a view to the preparation of the maps that are used as a basis for forest working-plans. They are carried out by the Topographical Survey branch of the Survey of India.

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TABLE I. Temperature in Burma

Station.	Height in feet of Observatory over sea-level.	Average temperature in degrees (Fahrenheit) for twenty-five years ending with 1901 in							
		January.		May.		July.		November.	
		Mean.	Diurnal range.	Mean.	Diurnal range.	Mean.	Diurnal range.	Mean.	Diurnal range.
Mergui *	96	77·8	20·8	81·5	15·0	[illegible]	[illegible]	78·7	17·5
Rangoon	41	76·7	24·8	84·6	14·8	[illegible]	[illegible]	79·9	5·1
Thayetmyo †	130	69·8	32·3	88·2	20·7	[illegible]	[illegible]	77·6	20·6
Mandalay ‡	250	70·2	28·0	88·9	20·3	[illegible]	[illegible]	[illegible]	19·5
Bhamo ‡	381	62·9	28·1	[illegible]	21·[illegible]	[illegible]	[illegible]	[illegible]0·5	22·0
Akyab	20	70·4	22·3	[illegible]	[illegible]	[illegible]	[illegible]	78·3	13·9
Hill station—Maymyo §	3,508	53·5	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	61·1	24·2

NOTE.—The diurnal range is the average difference betw[illegible] [illegible]h day.
* The figures here are for twenty-four years. [illegible] [twe]nty-five years.
‡ These figures are for thirteen years only. [illegible] only.

TABLE II. [illegible]

Station.	Average rainfall (in inch[es]) [illegible] with 1901 in												Total of year.
	January.	February.	March.	April.	May	June	[illegible]	[illegible]	[Se]ptember.	October.	November.	December.	
Mergui	0·93	1·86	3·26	6·32	18·86	31·88	[illegible]	[illegible]	27·00	12·78	3·54	0·36	168·58
Rangoon	0·12	0·35	0·19	1·63	11·10	17·85	[illegible]	[illegible]9·79	15·62	6·78	2·37	0·09	97·26
Thayetmyo	0·02	0·13	0·03	0·83	4·36	6·8[illegible]	[illegible]	7·06	6·00	4·32	1·60	0·14	38·24
Mandalay *	0·05	0·08	0·15	1·14	5·54	5·8[illegible]	[illegible]	3·96	5·47	4·71	1·52	0·27	31·77
Bhamo †	0·67	0·42	0·68	1·64	6·28	13·[illegible]	[illegible]8·61	15·99	8·99	3·54	0·99	0·42	71·28
Akyab	0·07	0·15	0·47	1·17	11·15	44[illegible]	52·63	41·86	21·43	10.00	2·97	0·65	187·38
Hill station—Maymyo ‡	0·08	...	0·12	0·51	10·57	5·75	2·97	7·26	9·70	6.16	0·78	0·24	44·14

* The figures here are for fifteen to seventeen years. † The figure[s] here are for fifteen to sixteen years. ‡ The figures here are for one to two years only.

TABLE III. DISTRIBU[illegible]TION OF POPULATIO[illegible] [illegible]MA, 1901.

Natural or administrative division.	Area in square miles.	Number of towns.	Number of villages.	[illegible]	[illegible]	[illegible]	Ur[illegible] population. [illegible]	[illegible]	Females.	Persons per square mile in rural areas.
Lower Burma.										
Akyab	5,136	1	2,351	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	8,099	86
Northern Arakan	5,233	..	27	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	..	3
Kyaukpyu	4,387	1	1,124	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	1,375	37
Sandoway	3,784	1	646	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]383	23
Total, Arakan Division	18,540	3	4,148	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]57	38
Rangoon town	19	1	..	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	..
Hanthawaddy	3,023	..	2,0[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	160
Tharrawaddy	2,851	3	1,82[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	131
Pegu	4,276	1	1,174	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	76
Prome	2,915	3	1,761	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	109
Total, Pegu Division	13,084	8	6,817	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	115
Bassein	4,127	2	2,617	391,427	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	85
Myaungmya	2,970	2	2,283	303,274	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	98
Thongwa	3,471	2	2,285	484,410	261,[illegible]	223,004	[illegible]	[illegible]	[illegible]	134
Henzada	2,870	6	2,349	484,558	241,557	243,001	[illegible]	[illegible]	[illegible]	[illegible]50
Total, Irrawaddy Division	13,438	12	9,534	1,663,669	865,917	797,752	12[illegible]	[illegible]	[illegible]86	115
Toungoo	6,172	2	1,682	279,315	143,685	135,630	23,45[illegible]	[illegible]	10,748	41
Salween	2,666	..	246	37,837	19,464	18,373	..	[illegible]	..	14
Thaton	5,079	2	1,173	343,510	180,208	163,302	20,979	12,049	8,930	63
Amherst	7,062	2	738	300,173	163,930	136,243	62,365	38,824	23,541	33
Tavoy	5,308	1	322	109,979	54,574	55,405	22,371	10,904	11,467	16
Mergui	9,789	1	395	88,744	46,280	42,464	11,987	6,169	5,818	7
Total, Tenasserim Division	36,076	8	4,556	1,159,558	608,141	551,417	141,155	80,651	60,504	28

Thayetmyo	4,750	2	1,275	239,706	118,948	120,758	26,031	13,917	12,114	45
Upper Burma.										
Pakokku	6,210	1	1,432	356,489	167,835	188,654	19,456	9,123	10,333	54
Minbu	3,299	2	1,147	233,377	111,750	121,627	13,737	6,618	7,119	66
Magwe	2,913	3	818	246,708	119,142	127,566	15,419	7,924	7,495	79
Total, Minbu Division	17,172	8	4,672	1,076,280	517,675	558,605	74,643	37,582	37,061	58
Mandalay	2,117	3	943	366,507	183,374	183,133	194,178	98,756	95,422	81
Bhamo	4,146	1	854	79,515	41,530	37,985	10,734	7,129	3,605	16
Myitkyinā	10,640	..	1,228	67,399	36,336	31,063	..	..	..	6
Kathā	6,994	..	1,958	176,223	86,494	89,729	..	..	..	25
Ruby Mines	5,476	..	828	87,694	48,214	39,480	..	..	..	16
Total, Mandalay Division	29,373	4	5,811	777,338	395,948	381,390	204,912	105,885	99,027	19
Shwebo	5,634	1	1,426	286,891	134,045	152,846	9,626	5,390	4,236	49
Sagaing	1,862	1	836	282,658	132,148	150,510	9,643	4,659	4,984	146
Lower Chindwin	3,480	1	1,272	276,383	121,967	154,416	7,869	4,382	3,487	77
Upper Chindwin	19,062	..	1,456	154,551	77,152	77,399	..	..	..	8
Total, Sagaing Division	30,038	3	4,990	1,000,483	465,312	535,171	27,138	14,431	12,707	32
Kyaukse	1,274	1	709	141,253	69,329	71,924	5,420	2,712	2,708	106
Meiktila	2,183	1	1,247	252,305	119,047	133,258	7,203	4,287	2,916	112
Yamethin	4,258	2	1,281	243,197	120,384	122,813	23,068	11,691	11,377	51
Myingyan	3,137	2	1,190	356,052	166,134	189,918	22,393	11,312	11,081	106
Total, Meiktila Division	10,852	6	4,427	992,807	474,894	517,913	58,084	30,002	28,082	86
GRAND TOTAL, PROVINCE PROPER	168,573	52	44,955	9,252,875	4,728,689	4,524,186	989,938	578,241	411,697	49
Dependent States.										
Northern Shan States	14,594	..	3,858	321,090	160,045	161,045	..	..	..	22
Southern Shan States	43,321	..	10,917	816,354	403,583	412,771	..	..	..	18
Chin Hills	8,000	..	401	87,189	43,167	44,022	..	..	..	10
Pakokku Chin Hills	2,250	..	264	13,116	6,549	6,567	..	..	..	5
GRAND TOTAL, BURMA	236,738	52	60,395	10,490,624	5,342,033	5,148,591	989,938	578,241	411,697	40

NOTE.—The figures in this table are those given in the census tables (Imperial) and do not always agree with those given in the District articles, which have been revised in the light of the information contained in the Provincial census tables, &c. The area of the Northern Arakan District given in the Imperial tables (5,233 square miles) included an unadministered tract which was not enumerated. The actual area of the administered portion of the District is about 1,500 square miles. The Pyapon District of the Irrawaddy Division has been formed since 1901, and the name of the Thongwa District in the same Division has been changed to Ma-ubin. Particulars regarding their area population &c., will be found in the District articles.

TABLE IV

Statistics of Agriculture, Burma

(In square miles)

	1881-90 (average).	1891-1900 (average).	1900-1.	1903-4.
Total area	102,342	160,583	158,353	162,530
Total uncultivated area .	94,962	146,949	140,459	142,851
Cultivable but not cultivated	39,898	50,138	39,414	41,417
Uncultivable . . .	55,064	96,811	101,045	101,434
Total cultivated area . .	7,380	13,634	17,894	19,679
Irrigated from canals . .	159	578	858	778
Irrigated from wells and tanks	36	123	279	119
Irrigated from other sources	53	216	164	176
Total irrigated area . .	248	917	1,301	1,073
Unirrigated area . . .	7,132	12,717	16,593	18,607
Total cropped area.				
Rice	6,219	10,369	13,360	14,540
Wheat	14	25	18	53
Other food-grains . .	373	1,608	2,288	2,704
Oilseeds	134	678	1,321	1,558
Sugar-cane	13	20	20	21
Cotton	48	228	241	250
Tobacco	39	92	109	100
Miscellaneous . . .	601	902	1,135	1,004
Total area cropped . .	7,380	13,634	17,894	19,679
Area double cropped . .	61	288	598	551

TABLE V

TRADE OF BURMA BY SEA WITH OTHER PROVINCES OF INDIA FOR THE YEARS 1890–1, 1900–1, AND 1903–4

(In thousands of rupees)

Articles.	1890–1.	1900–1.	1903–4.
Imports.			
Coal	11,87	25,11	37,93
Cotton, raw	11	29	16
Cotton, twist and yarn	36,02	34,84	41,81
Cotton manufactures, piece-goods, &c.	33,81	43,14	61,87
Fruits and vegetables	9,03	15,46	15,82
Grain and pulse	11,98	32,34	47,88
Gunny-bags	41,68	70,85	64,49
Oils	19,15	42,87	57,32
Oil and other seeds	8,83	15,26	24,97
Provisions	42,07	55,51	68,38
Silk and silk goods	12,42	14,17	7,58
Spices	38,37	58,11	55,00
Tobacco	34,07	56,16	51,59
All other articles	69,42	77,91	92,51
Total	3,68,83	5,42,02	6,27,31
Treasure	1,02,69	69,84	68,18
GRAND TOTAL	4,71,52	6,11,86	6,95,49
Government treasure	...	3,00,55	1,81,31
Exports.			
Cotton and cotton goods	6,20	17,78	11,39
Dyes and tans	17,65	6,64	5,34
Paddy and rice	49,62	7,34,48	1,33,74
Other grain and pulse	5,48	68,02	11,79
Oils	2,54	49,77	1,97,35
Provisions	19	76	75
Timber	88,42	83,16	76,37
All other articles	20,52	23,77	43,86
Total	1,90,62	9,84,38	4,80,59
Treasure	11,50	19,71	4,36
GRAND TOTAL	2,02,12	10,04,09	4,84,95
Government treasure	...	85,40	23,33

TABLE V (*continued*)

Foreign Maritime Trade of Burma for the Years 1890–1, 1900–1, 1903–4

(In thousands of rupees)

Articles.	1890–1.	1900–1.	1903–4.
Imports.			
Liquor	21,53	28,80	37,43
Provisions	34,34	45,24	55,62
Salt	13,92	10,43	8,69
Sugar	17,04	32,00	33,36
Hardware	14,11	23,54	33,40
Metals	27,72	57,10	1,07,08
Machinery	12,24	20,19	33,92
Silk	24,40	15,02	9,30
Cotton twist and yarn	38,04	43,25	45,22
Cotton goods	1,47,79	1,80,95	1,58,61
Silk goods	59,27	55,24	53,81
Woollen goods	24,64	32,97	32,14
Apparel	17,57	27,45	34,54
All other articles	96,36	1,14,70	1,83,14
Total	5,48,97	6,86,88	8,26,26
Treasure	1,06	12,27	20,93
Grand Total	5,50,03	6,99,15	8,47,19
Exports.			
Paddy and rice	8,43,03	7,92,43	13,13,68
Other grain and pulse	89	3,99	14,73
Dyes and tans	14,28	18,72	19,26
Rice bran	20,01	35,16	41,84
Hides and skins	5,80	15,53	25,08
Oils	1,57	9,35	10,06
Timber	37,36	83,42	88,81
Other articles	37,35	45,03	73,43
Total	9,60,29	10,03,63	15,86,89
Treasure	94	4,54	6,16
Grand Total	9,61,23	10,08,17	15,93,05
Government treasure { Imports	...	...	...
Government treasure { Exports	16	...	...

TABLE V (*continued*)

FOREIGN LAND TRADE OF BURMA FOR THF YEARS 1890–1, 1900–1, AND 1903–4

(In thousands of rupees)

Articles.	1890–1.	1900–1.	1903–4.
Imports.			
Animals	6,79	6,11	25,08
Timber	26,50	38,94	42,73
Silk, raw and manufactured	3,91	6,24	10,30
Orpiment	52	2,22	99
Tea, wet and dry	7	78	8
Hides and skins	19	2,68	1,13
All other articles	1,24	4,48	3,45
Total	39,22	61,45	83,76
Treasure	4,73	24,92	24,76
GRAND TOTAL	43,95	86,37	1,08,52
Exports.			
Cotton, raw	9,96	7,13	3,16
Cotton, manufactured	4,53	18,56	30,30
Provisions	22	2,22	1,31
Salt	4	1,05	89
Silk and silk goods	2,47	2,50	1,91
Woollen goods	1,41	3,17	82
Spices	24	62	54
All other articles	1,69	9,43	7,14
Total	20,56	44,68	46,07
Treasure	7,52	20,86	31,79
GRAND TOTAL	28,08	65,54	77,86

TABLE VI

STATISTICS OF CRIMINAL JUSTICE, BURMA

	Average for ten years ending		1901.	1903.	Percentage of convictions during 1903.
	1890.*	1900.			
Number of persons tried:					
(*a*) For offences against person and property	24,719	37,184	38,372	42,801	47·4
(*b*) For other offences against the Indian Penal Code . .	9,434	12,475	14,354	13,902	52·4
(*c*) For offences against Special and Local laws . . .	24,400	51,754	66,492	70,319	72·6
Total	58,553	101,413	119,218	127,022	61·9

* For the first nine years Lower Burma figures only; Upper Burma figures not available till 1890.

TABLE VII

STATISTICS OF CIVIL JUSTICE, BURMA

	Average for ten years ending		1901.	1903.
	1890.*	1900.		
Suits for money or movable property	32,072	46,670	52,940	63,092
Title and other suits . .	2,798	4,823	5,203	5,564
Rent suits	...	...	...	...
Total	34,870	51,493	58,143	68,656

* For the first nine years Lower Burma figures only; Upper Burma figures not available till 1890.

TABLE VIII

Principal Sources of Provincial Revenues in Burma

(In thousands of rupees)

	Average for ten years ending March 31, 1899.		Average for ten years ending March 31, 1900.		Year ending March 31, 1901.		Year ending March 31, 1904.	
	Total amount raised (Imperial, Provincial, and Local).	Amount credited to Provincial revenues.	Total amount raised (Imperial, Provincial, and Local).	Amount credited to Provincial revenues.	Total amount raised (Imperial, Provincial, and Local).	Amount credited to Provincial revenues.	Total amount raised (Imperial, Provincial, and Local).	Amount credited to Provincial revenues.
Land revenue * . . .	1,30,50	50,66	2,46,19	1,24,51	3,19,95	2,44,62	3,52,30	2,37,17
Salt	3,63	45	15,34	1,56	13,41	6,70	15,48	7,74
Stamps	9,41	5,27	16,14	10,00	20,83	15,62	29,43	22,08
Excise (Liquor) . .	10,49	4,89	23,76	6,77	28,30	14,15	33,93	11,31
Excise (Opium) . .	15,91	8,92	18,92	6,32	25,00	12,50	40,71	13,57
Customs	56,40	12,41	76,84	45	92,20	1,04	1,31,66	1,06
Assessed taxes (from 1886) .	1,02	24	8,02	3,71	11,18	5,59	11,88	5,94
Forests	26,21	9,94	60,84	23,25	80,54	40,27	82,69	41,34
State railways . . .	25,49	23,56	73,78	40,49	1,13,34	...	1,41,07	...
Other sources . . .	26,92	10,10	46,07	17,16	56,11	24,31	72,41	30,57
Total	3,05,98	1,26,44	5,85,90	2,34,22	7,60,86	3,64,80	9,11,56	3,70,78

* Including capitation tax and land rate in lieu, *thathameda*, fishery revenue, &c.

TABLE IX

Provincial Expenditure under principal Heads in Burma

(In thousands of rupees)

	Average for ten years ending March 31, 1890.	Average for ten years ending March 31, 1900.	Year ending March 31, 1901.	Year ending March 31, 1904.
Opening balance .	15,58	38,24	1,15,45	1,05,30
Charges in respect of collection (principally land revenue and forests) . .	18,77	39,72	70,10	80,46
Salaries and expenses of civil departments:—				
(*a*) General administration	4,44	7,81	10,54	11,36
(*b*) Law and justice .	17,41	26,02	37,53	41,04
(*c*) Police . . .	22,51	46,63	91,49	95,97
(*d*) Education . .	3,05	4,50	7,65	9,02
(*e*) Medical . . .	2,01	3,02	5,95	9,29
(*f*) Other heads . .	4,20	4,92	7,95	10,96
Pensions and miscellaneous civil charges . . .	4,49	8,99	12,00	17,04
Other charges and adjustments	25,05	37,21	2,10	4,12
Irrigation	5,08	8,86	16,93	15,63
Civil public works . .	19,87	37,23	87,40	96,21
Total expenditure	1,26,88	2,24,91	3,49,64	3,91,10
Closing balance .	15,14	47,55	1,30,61	84,98

TABLE X

Income and Expenditure of Municipalities in Burma

(In thousands of rupees)

	Average for ten years 1890–1900.	1900–1.	1903–4.
Income.			
Tax on houses and lands . . .	8,33	10,96	12,30
Other taxes	6,35	9,99	13,00
Loans	2,25	11,58	26,57
Markets and slaughter-houses . .	10,34	12,62	13,81
Other sources	16,23	18,59	20,21
Total income	43,50	63,74	85,89
Expenditure.			
Administration and collection of taxes	3,54	3,88	6,74
Public safety	3,03	3,49	3,09
Water-supply and drainage . .	2,72	3,76	29,24
Conservancy	5,44	7,16	8,39
Hospitals and dispensaries . .	3,53	5,58	4,57
Markets and slaughter-houses . .	2,55	2,56	7,42
Public works	9,30	11,27	8,70
Education	1,53	1,52	2,41
Extraordinary and debt . . .	7,10	9,82	14,07
Other heads	4,47	4,56	6,74
Total expenditure	43,21	53,60	91,37

TABLE XI

Strength and Cost of Civil Police, Burma

	1881.		1891.		1901.		1903.	
	Number.	Total cost.	Number.	Total cost.	Number.	Total cost.	Number.	Total cost.
Supervising Staff.		Rs.		Rs.		Rs.		Rs.
District and Assistant Superintendents . .	21		97		96		93	
Inspectors . .	67		141		144		153	
Subordinate Staff.								
Head constables	107		317		332		341	
Sergeants, constables, &c., Civil Police .	5,841	14,45,718	14,393	35,36,621	11,907	31,74,387	12,262	34,53,931
Sergeants, constables, &c., Municipal Police	817		545		92		22	
Sergeants, constables, &c., Cantonment Police . . .	..		109		22		22	
Sergeants, constables, &c., Railway Police	..		167		286		357	
Total	6,853	14,45,718	15,769	35,36,621	12,879	31,74,387	13,250	34,53,931

TABLE XII. Jail Statistics, Burma

	1881.	1891.	1901.	1903.
Number of Central jails .	2	6	6	6
Number of District jails .	6	21	26	26
Number of subsidiary jails (lock-ups) . . .	6	3	*nil*	*nil*
Average daily jail population :—				
(*a*) Male.				
In Central jails . .	2,860	8,310	7,320	6,833
In other jails . . .	1,805	3,041	4,475	4,241
(*b*) Female.				
In Central jails . .	29	67	69	58
In other jails . . .	32	35	51	55
Total	4,726	11,453	11,915	11,187
Rate of jail mortality per 1,000	44·44	30·12	15·19	17·24
	Rs.	Rs.	Rs.	Rs.
Expenditure on jail maintenance	3,35,334	7,45,309	7,95,874	6,84,233
Cost per prisoner . .	70–15–3	65–1–2	66–12–9	61–2–7
Profits on jail manufactures .	1,68,131	3,22,733	3,14,436	3,15,484
Earnings per prisoner . .	45–11–7	37–1–1	31–14–3	34–9–6

TABLE XIII

COLLEGES, SCHOOLS, AND SCHOLARS, BURMA

Institutions.	1890-1.			1900-1.			1903-4.		
	Number of institutions.	Scholars.		Number of institutions.	Scholars.		Number of institutions.	Scholars.	
		Males.	Females.		Males.	Females.		Males.	Females.
Public.									
Arts colleges . .	1	24	1	2	136	4	2	189	5
Secondary schools { High .	12	2,890	384	22	5,335	978	28	7,432	1,267
Secondary schools { Middle	71	5,135	1,195	307	18,858	4,829	364	23,182	5,892
Primary schools .	5,710	103,299	14,758	4,091	99,042	28,596	4,925	111,462	35,301
Training schools .	4	51	30	10	224	80	14	395	191
Other special schools . . .	21	594	29	49	1,018	294	224	1,421	361
Private.									
Advanced . . .	..	..	..	..	..	..	..	..	..
Elementary . .	5,044	38,016	2,043	13,118	144,321	3,361	14,159	155,588	4,449
Total	10,863	150,009	18,440	17,599	268,934	38,142	19,716	299,669	47,466

TABLE XIV

MEDICAL STATISTICS, BURMA

Hospitals.	1881.	1891.	1901.	1903.
Number of civil hospitals and dispensaries	27	80	119	134
Average daily number of :—				
(*a*) In-patients.	340	998	1,588	2,063
(*b*) Out-patients	721	2,582	4,553	4,841
Income from :—	Rs.	Rs.	Rs.	Rs.
(*a*) Government payments . . .	70,281	73,822	1,39,239	336,544
(*b*) Local and municipal payments. .	61,079	2,53,728	5,36,784	394,352
(*c*) Fees, endowments, and other sources	28,762	18,928	77,144	65,064
Expenditure on:—				
(*a*) Establishment	65,442	1,41,489	291,260	3,29,346
(*b*) Medicines, diet, buildings, &c.. .	65,285	2,04,989	184,901	4,64,699
Vaccination.	1880-1.	1890-1.	1900-1.	1903-4.
Population among whom vaccination was carried on	3,128,285	7,542,332	8,146,855	10,477,508
Number of successful operations . .	35,199	141,795	366,079	329,762
Ratio per 1,000 of population . . .	11	19	45	31
	Rs.	Rs.	Rs.	Rs.
Total expenditure on vaccination . .	16,709	40,643	78,854	94,331
Cost per successful case	0-7-8	0-4-7	0-3-5	0-4-7

MOUNTAINS, LAKES, ISLANDS, RIVERS, CANALS, AND TRIBES

Arakan Yoma.—The name given to the most southerly spur thrown off from the mass of hill country which runs north and south along the western edge of Burma, separating it from Eastern Bengal and Assam. Farther north this expanse of high land is known as the Arakan Hill Tracts, the Chin Hills, and the Lushai Hills. The Yoma is the well-defined narrow ridge which branches off from the main mass parallel to the coast of Arakan, separating Akyab, Kyaukpyu, and Sandoway from the Districts of Minbu, Thayetmyo, Prome, Henzada, and Bassein, between the 17th and 21st parallels of latitude. The range is not high, the loftiest ridges averaging from 4,000 to 5,000 feet, but it is better known than the more elevated ranges farther north. None of its peaks is called by other than purely local names. The chains are steep and thickly wooded, but the forests contain no teak. Broadly speaking, the range forms a reversed anticlinal, the central portion and part of what yet remains of the western half of the anticlinal being formed of sandstones, shales, and limestones, which are probably of Cretaceous age, while by far the larger portion of the Yoma, including the eastern half, is composed of rocks containing Tertiary fossils extending from the Nummulitic to the Miocene period. The inhabitants of the Yoma are almost exclusively Chins, whose language and characteristics differ somewhat from those of the Chins of the Pakokku Chin Hills and Northern Arakan. The Yoma Chins have received considerable attention at the hands of the missionaries of Burma, and a certain proportion have embraced Christianity. The two principal passes over the Yoma are crossed by roads leading from An in Kyaukpyu District to Ngape in Minbu District, and from Taungup in Sandoway District to Padaung in Prome District.

Pegu Yoma.—A chain of hills in Burma, to the east of the Irrawaddy, running north and south and forming the watershed between the Irrawaddy and the Sittang, from about 17° 20′ to 20° N. Like the last-named river its northern end is situated in the District of Yamethin and its southerly limit lies a little to the north of Rangoon; in fact it may be said to extend, in

the shape of undulating ridges, into Rangoon itself, one of its final mounds being crowned by the great golden Shwedagon pagoda, which lies to the north of the city. The total length of the chain is about 200 miles; and its crests separate the Districts of Magwe, Thayetmyo, Prome, Tharrawaddy, and Hanthawaddy on the west from those of Yamethin, Toungoo, and Pegu on the east. From its eastern slopes flow the Pegu river and several of the tributaries of the Sittang, while to the west it sends down no stream of importance, but its more southerly hills hold the springs of the various watercourses that swell the volume of the Myitmakā or Hlaing river, upon the banks of which Rangoon is built. The Yoma is of no great height, its loftiest peak being only about 2,000 feet above the level of the sea, but it is steep and rugged. Its geological structure is simple. The beds composing it have been thrown into gentle broad synclines and anticlines, and their sands and shales probably overlie conformably the Nummulitics on the eastern slopes of the ARAKAN YOMA. A portion of the range is no doubt of Miocene age, but it is probable that representatives of other geological groups are present in it. The forests are rich in teak and other valuable timber, the bulk of which is floated down the Myitmakā to Rangoon. The inhabitants of the Yoma are for the most part Karens; but in the north, on the borders of Prome, Magwe, Toungoo, and Thayetmyo Districts, there are a few villages of Chins, the only known representatives of the race in any strength to the east of the Irrawaddy. They appear to have come from the Arakan Yoma, but the date of their migration is doubtful.

Mount Victoria.—The highest point in the Natmadaung range in the Pakokku Chin Hills, Burma, situated in 21° 16′ N. and 93° 57′ E., close to the eastern edge of the hills of Northern Arakan, and about 76 miles due west of the Irrawaddy, opposite the town of Pakokku, 10,400 feet above the sea. Of recent years Mount Victoria has been found to possess possibilities as a sanitarium, the construction of Government buildings has been commenced, and in 1902 the head-quarters of the Assistant Superintendent of the Pakokku Chin Hills were removed from Mindat Sakan to Kanpetlet on the mount.

Popa.—An extinct volcano, situated in 20° 56′ N. and 95° 16′ E., towards the south of Myingyan District, Upper Burma, 4,961 feet above the sea. It is an isolated hill mass rising up from undulating sandy country, and has acquired a more than local notoriety as the reputed abode of certain powerful *nats* or spirits. Popa is more or less conical in shape;

its summit is bare, but its lower slopes are covered partly with thick jungle and partly with garden land, which receives a liberal rainfall and bears excellent crops. The crater at its summit is about a mile across, and forms a punch-bowl 2,000 feet in depth. A Government bungalow has been built near the summit, but no regular use has as yet been made of the hill as a sanitarium.

Indawgyi.—A lake in the south-west of Myitkyinā District, Upper Burma, lying between 25° 5′ and 25° 20′ N. and 96° 18′ and 96° 23′ E., and measuring about 16 miles by 6. It is the largest lake in Burma. It is surrounded by low hills on the south, east, and west; and its overflow, known as the Indaw stream, flows first north-eastward and then south-eastward into the Mogaung stream, which enters the Irrawaddy some distance south of Myitkyinā. The lake abounds in fish, and the valley surrounding it is fertile.

Ramree (*Yan-bye*).—An island off the coast of Arakan, in Kyaukpyu District, Lower Burma, lying between 18° 43′ and 19° 38′ N. and 93° 30′ and 93° 56′ E. It is about 50 miles in length, and at its broadest part about 20 in breadth. The town of Kyaukpyu, the head-quarters of the District, is built at the northern end. The island lies parallel with the general line of the coast, namely, north-west and south-east, and is traversed by a range of hills bearing generally in the same direction. The population is composed chiefly of Arakanese.

Cheduba (*Manaung*).—An island off the coast of Arakan, in Kyaukpyu District, Lower Burma, lying between 18° 40′ and 18° 56′ N. and 93° 28′ and 93° 46′ E., with an area of 220 square miles. The island is triangular in shape; its northern coast runs east and west, its eastern north and south, while its outward side, turned towards the Bay of Bengal, follows the general trend of the coast, namely, north-west and south-east. It is well wooded, and possesses a good deal of undulating country and some hills which rise to a height of over 1,000 feet above the sea. In the extreme north-west corner is a so-called volcano which discharges inflammable gas. The island forms a township. Its population was 23,340 in 1891, and 26,899 in 1901. Rice and tobacco are the two main items of export. The name is said to be a corruption of *Chār-dhuba*, or 'four capes.' The town of Cheduba, the township head-quarters (population 1,540), is on the eastern coast, near the point where the island approaches closest to the adjacent island of Ramree.

Bilugyun.—An island at the mouth of the Salween river in

Lower Burma, south-west of the town of Moulmein, lying between 16° 14′ and 16° 31′ N. and 97° 27′ and 97° 38′ E., with an area of 190 square miles. Its length north and south is 20 miles, and its width east and west rather less than 10. It constituted, in 1901, the Bilugyun township of Amherst District, and then had a population of 41,880, compared with 34,056 in 1891. The density is 220 persons per square mile, which is high for Burma. The centre of the island is occupied by a range of wooded hills, but the greater part consists of alluvial plains. The inhabitants are mainly Talaings, but about one-quarter of the population is Burman, and there is a fair proportion of Karens. Bilugyun means 'the island of *bilus*' or ogres. The island now forms the township of Chaungzon, the head-quarters of which are at Chaungzon (population, 1,112), situated in the centre of the island.

Cocos.—Two islands in the Bay of Bengal, lying between 14° 4′ and 14° 10′ N. and in 93° 22′ E., 45 miles north-east of the Andaman Islands, with which they are geologically connected, and a short distance south of Table Island, on which there is a lighthouse. They form part of the Hanthawaddy District of Lower Burma. Their area is small, the larger island being about 14 square miles in extent, and the smaller about 2½ miles long and a mile broad. They are flat, waterless, unpopulated, and covered with coco-nut palms and forest jungle. The Cocos have been leased by Government for the sake of their vegetable produce, and are visited from time to time by coco-nut gatherers.

Diamond Island (Burmese *Thamihla*, 'beautiful daughter'). —A solitary jungle-covered islet off the coast of Burma, about a square mile in extent, lying due south of the mouth of the Bassein river in 15° 51′ 30″ N. and 94° 18′ 45″ E., about 8 miles from Negrais Island, and nearly half-way between the mainland and the Alguada Reef lighthouse which lies south of it. It derives its name from the fact that it is more or less diamond-shaped, its angles facing the points of the compass. It is well-known, partly by reason of its rich turtle-beds, partly on account of its being a wireless telegraphy station, from which communication with the Andamans has been established. It is connected with Bassein by a telegraph line, and is visited by vessels calling for orders.

Mergui Archipelago.—A collection of islands in the Bay of Bengal, stretching along the coast of the Tenasserim Division of Lower Burma between, roughly, 9° and 13° N. The Archipelago numbers in all about 800 islands, which are almost

uninhabited except by the Salons or sea-gipsies, who wander from fishery ground to fishery ground in their boats. The largest is King Island, one of the few that possess regular villages. The large island of Kisseraing (Kitthayi), though now a waste of jungle, contains traces of an old Siamese town, mentioned in the archives of Tenasserim. Others are Tavoy Island, off the south-west corner, on which are the most important of the birds'-nest caves; Ross and Elphinstone, the nearest pearling-ground to Mergui; Sellore, protecting the fisheries of Auckland Bay; Domel, between which and Kisseraing is the difficult channel of Celerity Passage; Bentinck, farther out, and the Great Western Torres, farther still to sea in 97° 30′ E.; Malcolm and Owen, off which are the richest pearling-grounds; Sullivan's, little known except to the Salons; and St. Luke's and St. Matthew's, forming, with Hastings Island, a fine natural harbour, and also frequented by Salons. Of the islands at the mouth of the Pakchan river and southwards, the outer ones generally are British and those near the coast Siamese.

Kaladan.—A river of Burma, which rises in the Chin Hills in the Yahow country, and is there known as the Boinu. Its course at first is southwards, then northwards. Bending westwards, it passes through a portion of the Lushai Hills, and then turning south again, enters Northern Arakan at its northern end, and flows down the western side of the District, past Paletwa, the head-quarters, which lies on its western bank. Farther south it enters Akyab District and, continuing in a southerly direction, empties itself after a course of nearly 300 miles into the Bay of Bengal at Akyab, where its estuary is 6 miles in breadth. It is a picturesque river, navigable for steam traffic as high as Paletwa, nearly 100 miles from the sea. Its principal tributaries are the Dalet, the Palet, the Mi, and the Pi.

Irrawaddy (*Irawadi*).—The great river of Burma, formed by the junction of two streams, the N'maikha and the Malikha, which rise in the hills in the extreme north of the Province at about the 28th parallel of latitude, and meet at a point about 30 miles north of the town of Myitkyinā. From the confluence southwards the united stream, henceforth known as the Irrawaddy, divides Burma proper into two sections, east and west, and eventually empties itself, after a course of 900 miles, into the Bay of Bengal, west of Rangoon. The Irrawaddy is by far the best known of the natural features of the Province. Nearly all the old capitals were built upon its banks. Its

waters skirt more than half the Districts of Burma. Of the ten most populous towns, six—namely, Mandalay, Prome, Bassein, Henzada, Myingyan, and Pakokku—as well as important stations like Bhamo and Thayetmyo, lie on it, while Rangoon is directly connected with it by more than one waterway. From end to end it is navigable at one season of the year or the other for steam traffic.

Starting from the confluence of the N'maikha and Malikha, and going south, the first affluent of importance is the Mogaung stream, which enters it from the west about 15 miles above Sinbo. Two miles above Bhamo, which lies on its left bank, its waters are swelled by those of the TAPING from the east. The Taping rises in Chinese territory; and its source, which has not yet been ascertained with precision, cannot be far distant from that of the SHWELI, the next large tributary of the Irrawaddy, which, traversing the State of Möngmit, empties itself into the main stream, 20 miles south of Kathā. From its junction with the Shweli, the Irrawaddy pursues its course southward. North of Mandalay it is joined by the Madaya stream from the east; and south of that city, opposite the old Burmese town of Sagaing, it makes an extensive bend to the west. At the curve the tortuous MYITNGE quits the gorges of the Shan States to join it from the east, and shortly after this it receives the waters of the Mu from the hills of Shwebo and Kathā in the north. Curving southward again near Myingyan, it is joined immediately above Pakokku by its main tributary, the CHINDWIN, a stream almost its equal in volume, which likewise comes from the very north of the Province. South of its junction with the Chindwin the Irrawaddy is fed from the west by various small tributaries, rising in the Arakan Yoma and the Pakokku Chin Hills, of which the most noteworthy are the Yaw, the Mon, and the Man, and by a few minor streams from the direction of the Pegu Yoma; but after entering Lower Burma, little is added to its volume before it spreads out like a fan in the delta country in the neighbourhood of Henzada.

A journey down the Irrawaddy would amply suffice to show to the traveller Burma in most of its varied guises. Emerging from its northern home in the Kachin Hills the river plunges, about 60 miles below the town of Myitkyinā, through the third defile, or 'the Gates of the Irrawaddy,' a succession of foaming stretches of water hemmed into an almost inconceivably narrow channel, which is impassable during the rains and not without its dangers in the dry season. From the Gates southwards high hills stand on either hand, sending their outlying slopes

down to the water's edge. They recede somewhat in the neighbourhood of Bhamo, but between that town and Shwegu they throw a formidable barrier across the river. At this second defile the current forces its way through an enormous rift in a rugged spur; and the river steamer swings through turbulent water at the foot of high grim crags down a passage so narrow that at each fresh bend the rocky walls ahead have the appearance from a distance of uniting and offering no outlet. South and west of the defile wide *kaing*-grass plains open out, to shut again above Kathā, and thence marshy level and wooded hill slope alternately till somewhat to the north of Mandalay. Here, after the first defile (less imposing than the two northerly ones) has been passed, the high ground retires from the river to give place to the central plain of Burma, over which the Districts of the dry zone extend. For hours together all that can be seen beyond the blinding white banks and low sandy bluffs by the river's edge are rolling stretches of rocky land, covered with sparse undergrowth and backed by yellow sandstone ridges. Hills there are, but they are mostly remote. From Myingyan southwards POPA alone raises its mass above the plain; but it seems to have nothing in common with its environment, and its blue serves only to heighten the dusty glare of the thirsty land it looks down upon. With the approach to Prome, however, the dry belt is passed, vegetation thickens, each hour carries the traveller into areas of heavier rainfall; and by the time the delta is reached and the river spreads out towards the sea, all signs of rising ground have disappeared, and on all sides plains of rich paddy-fields and flat stretches of jungle extend away to the horizon. The farther south the river flows, the oftener does it send off branches to meander through the fertile levels; and near the coast the country becomes a maze of turbid tidal creeks flowing through dreary expanses of mangrove jungle.

As a source of irrigation, the value of the Irrawaddy is enormous. During the monsoon its waters rise and inundate all the low-lying ground in the vicinity of the channel. When they fall again in October and November, vast stretches of rich soil are left on and adjoining the banks, and on the many islands in the bed of the stream, which are suitable for rice, and for what is known as *kaing* cultivation. The river does not, however, supply water to any of the regular irrigation systems of the Province. In the delta the country adjoining its channel is protected from inundation by an elaborate system of embankments.

A considerable portion of the internal trade of the country passes up and down the Irrawaddy. The steamers of the Irrawaddy Flotilla Company run throughout the greater part of its course, bringing down petroleum, tea, cotton, and grain from the up-country stations on its banks, and returning laden with cargoes of salt, piece-goods, and a number of other articles. Some of these boats are in themselves floating bazars, on which the river villages have learnt to depend for a regular supply of commodities. Native boats, too, ply up and down, performing on a small scale similar commercial functions to those discharged by the Company, and throughout the year rafts of bamboo and timber are floated in enormous quantities down the stream. The Irrawaddy is the main source of water-supply to the towns and villages on its banks. At Prome there are systematic water-works by which the river water is distributed through the town. The river is tidal as far as Danubyu or Donabyu, about 70 miles from the coast. The Irrawaddy is nowhere bridged. At two points, between Amarapura and Sagaing, and between Tharrawaw and Henzada, it cuts across the line of railway and is crossed by a steam ferry. A railway bridge at the first of these ferries is in contemplation.

Bassein River (*Ngawun*).—A river of Burma, being the most westerly of the waterways through which the waters of the Irrawaddy find their way to the sea. It leaves the main channel a few miles above the town of Henzada, and flows in a south-westerly direction, past the towns of Lemyethna and Ngathainggyaung-Daunggyi, through the flat delta country, to Bassein, and thence, after a total course of 200 miles, into the Bay of Bengal immediately north of the Alguada Reef lighthouse, at about the 16th parallel of latitude. Bassein, famous in the past as a commercial emporium, and still important as a rice-shipping centre, lies on its left or eastern bank, at a point about 75 miles from where it flows into the sea. Ocean steamers can proceed up as far as Bassein, and the river is navigable for light-draught launches throughout its entire length during the rainy season.

Chindwin River.—The most important tributary of the Irrawaddy in Burma. Its source is as yet undetermined, as it is by no means certain whether the Tanai or the Tawan stream, which unite to form the main river, is to be taken as the chief source; but it may be said to have its origin in the hills that surround the Hukawng valley in the extreme north of the Province at about the 27th parallel of latitude. Little is known of the river during its passage in a westerly and south-westerly

direction through the Hukawng valley. At the southern end of the valley its course is interrupted by falls or rapids, and about this point it enters the small Shan State of Zingkaling Hkamti and the Upper Chindwin District. Its first affluent below the rapids is the Uyu, which rises in the Jade Mines tract to the east, and flows into the main stream a few miles below the town of Homalin. Thence, for some distance, the Chindwin forms the eastern boundary of the Shan State of Hsawnghsup. At about the 24th parallel of latitude the Yu enters it from the Kabaw (Kubo) valley on the west, and a few miles below this junction it passes Kindat, the head-quarters of the Upper Chindwin District, which lies on its left bank. Kalewa, about 40 miles farther down on its right bank, is the point where the Chindwin is joined by the Myittha river from the Chin country in the west. So far its course has been on the whole southerly. At Mingin, however, a town on its right bank, it bends to the east and then to the north, after which, at the village of Maukkadaw, it curves to the south again and passes from the Upper into the Lower Chindwin District. Soon after crossing the border, the character of the country on the banks changes. In the Upper Chindwin the valley is for the most part narrow; for long stretches wooded hills slope sheer down to the water's edge, and where the high ground falls back from the river, the levels are a mass of *kaing*-grass jungle; population is sparse, and villages are few and far between. South of Maukkadaw the valley widens out, the hills retire, hamlets multiply, and broad level plains are covered with crops typical of the dry zone. After passing Kani on the right bank and Alon, the terminus of the Sagaing-Alon Railway, on the left, Monywa, the head-quarters of the Lower Chindwin District (also on the left bank), is reached. South of Monywa the river forms the boundary between Sagaing and Pakokku Districts, flows past the market towns of Amyin and Yesagyo, and eventually empties itself into the Irrawaddy about half-way between the towns of Pakokku and Myingyan. The Chindwin is altogether between 500 and 600 miles in length. For more than 400 miles it is navigable during certain seasons of the year for steam traffic. The steamers of the Irrawaddy Flotilla Company run the whole year round as high as Kindat, 200 miles from its mouth, and during the rains as high as Homalin, about 130 miles farther up the stream. Country boats ply freely through its whole length, both above and below the rapids, and it is utilized largely for rafting. The banks of the river are used for the cultivation of tobacco and other *kaing* crops. In its lower

reaches water-wheels are here and there used for lifting water to the level of the fields on the banks; and in the neighbourhood of the Irrawaddy there are a few minor village irrigation works which depend for their water-supply on the main stream, but the latter has not yet been worked systematically for irrigation purposes. There are no bridges over the Chindwin, and no ferries of more than local importance.

Taping.—A river of Burma, which rises in China about latitude 25° N., and flows in a south-westerly direction through the Kachin Hills and Bhamo District into the Irrawaddy, which it reaches 2 miles above the town of Bhamo. It enters the Irrawaddy plain at Myothit, and up to this point is navigable for launches in the rains. The river is about 150 miles in length, its course in British territory being about one-third of its total length. In the flood season the stream is erratic, and villages on its banks have been at times washed away by the shifting of its channel.

Shweli.—A river of Burma, called Nam Mao by the Shans, who in ancient days first established themselves in what is now Burma along the Shweli valley. The stream rises in China in the neighbourhood of Tengyüeh, and flows first in a south-westerly and then in a northerly direction past the village of Namhkam, through the State of Möngmit and along the northern end of the Ruby Mines District into the Irrawaddy, which it reaches at a point 20 miles south of the town of Kathā. The total length of the river is about 260 miles. It abounds in rapids, and is but little used for navigation, but is employed freely for floating timber. It has no tributaries of importance.

Myitnge (or Doktawaddy).—A river of Burma, one of the principal tributaries of the Irrawaddy. It rises in about 23° 18′ N., and 98° 23′ E., in the Northern Shan State of North Hsenwi, where it is known as the Nam Tu. Its course is in the main south-westerly, and first passes through the States of North Hsenwi, Tawngpeng, and Hsīpaw, the first and last of which have their chief towns on its banks. For the latter half of its course of 130 miles the river forms the boundary, first between the States of Hsīpaw and Lawksawk, and next between the Districts of Mandalay and Kyaukse. It flows eventually into the Irrawaddy about 12 miles south of Mandalay, immediately opposite the town of Sagaing. The Myitnge is navigable only up to the point at which it reaches the plains. The Rangoon-Mandalay Railway crosses it near its mouth, and it will shortly be bridged at Hsīpaw. The principal tributary

is the Nam Ma, which joins it from the east, a little to the east of the town of Hsīpaw.

Rangoon River.—A river of Burma on the left bank of which Rangoon stands. It rises about 150 miles to the north-west of the city in Prome District, not far from a piece of water known as the Inma Lake, through which it flows, and pursues a south-easterly course down the centre of the narrow strip of lowland in Prome, Tharrawaddy, and Hanthawaddy Districts, which separates the Rangoon-Prome Railway from the channel of the Irrawaddy. In the north it is known as the Myitmakā, and is divided from the Irrawaddy by a low but fairly well-defined watershed. The Myitmakā is an important waterway in Tharrawaddy District. Fed by the streams from the Pegu Yoma in the east, it is the main outlet for the timber which is extracted from the forests of this range. The most important village on its banks in this area is Sanywe, where there is a forest revenue station. Farther south the river is known as the Hlaing, and on this portion steam traffic of light draught is practicable. The Hlaing is connected by various side creeks with the Irrawaddy, the last of which above Rangoon is the Panhlaing, which joins it almost opposite the western suburb of Kemmendine. From thence onwards the waterway is known as the Rangoon river. The stream, on which ocean steamers can ride at their moorings, separates the city proper and the cantonment of Rangoon from the dockyard suburb of Dala, which lies on the right bank, close to the mouth of the TWANTE CANAL. After skirting the western edge of Rangoon, the river bends to the east and meets the waters of the Pazundaung creek and the PEGU RIVER to the east of the city, immediately above a shoal known as the Hastings. Thence its course is south-easterly, and it flows eventually into the Gulf of Martaban between Elephant Point and the Eastern Grove lighthouse. Ocean steamers can go up the river as far as Rangoon, but no higher. Skilled pilotage is required for the navigation of the 21 miles that lie between Rangoon and the sea, but the difficulties of the river are not to be compared with those of the Hooghly.

Pegu River.—A river of Burma, rising in the north-west corner of Pegu District on the eastern slopes of the Pegu Yoma, and flowing into the RANGOON RIVER immediately east of the city of Rangoon, about 180 miles from its source. For the first two-thirds of its course it runs in a south-easterly, and for the last third in a south-westerly direction. The only town of importance on its banks is Pegu, one of the ancient capitals of the

Talaing kingdom, now the head-quarters of a District, where the stream is crossed by a substantial iron bridge. Below Pegu the river is connected with the Sittang river on the east by the Pegu-Sittang Canal, a navigation channel constructed to facilitate communication between Rangoon and the Sittang. From Pegu to Rangoon the stream flows through a dead level in a winding channel of no great breadth. At its mouth the river is about a mile wide. Here it separates the eastern portion of the town of Rangoon from Syriam, which was once famous as a trading centre and has of late shown signs of regaining a portion of its lost commercial importance. The Pegu River is navigable for light-draught steamers as high as Pegu during the rainy season.

Sittang (or Paunglaung).—A river of Burma, flowing midway between the valleys of the Irrawaddy and the Salween. It is separated from the former by the Pegu Yoma, and from the latter by the Paunglaung range of hills; and it follows, like both these streams, a southerly course. It rises east of Yamethin District at about 20° N. latitude, and is fed by affluents from the Yoma on the west, and from the Karen Hills and the Paunglaung range on the east. It winds through Toungoo District, and between Pegu and Thaton, and spreads out almost imperceptibly, after a course of about 350 miles, into the northern apex of the Gulf of Martaban, at a point equidistant from the ports of Rangoon and Moulmein. Its trend is more or less parallel to that of the Rangoon-Mandalay Railway, the oldest section of which (Rangoon to Toungoo) was originally known as the Sittang Valley line. Of the towns on its banks the two most important are Toungoo, the head-quarters of the District of that name, and Shwegyin, a municipality, formerly the head-quarters of what was known as Shwegyin District. At Myitkyo, a village on its lower reaches, the Sittang is connected by the PEGU-SITTANG CANAL with the PEGU RIVER on the west; and farther south again, at Mopalin, the SITTANG-KYAIKTO CANAL unites it with Kyaikto and other portions of Thaton District in the south-east. Both these canals are primarily intended for navigation. There are no regular irrigation works connected with the Sittang. The river has not yet been bridged, but bridges are in course of construction at Toungoo and at the point where the railway to Moulmein crosses it. The river has long been remarkable for the bore or tidal wave which sweeps up its mouth from time to time and occasionally does considerable damage.

Salween (called *Thanlwin* by the Burmese and *Nam Kong*

by the Shans).—The most important river of Burma after the Irrawaddy. Like its sister stream, it flows generally from north to south. So far as is at present known, the springs of this headstrong and turbulent waterway, which has been described as the most uncompromising natural boundary in the world, are situated at about the 32nd or 33rd parallel of latitude in unexplored country to the east of Tibet, far north of the sources of the Irrawaddy; and at about the 27th parallel of latitude only a comparatively narrow watershed separates its channel from that of the N'maikha. It is not, however, till it has penetrated three degrees farther south that it enters British territory. Thence flowing southwards and ploughing between steep hills, it bisects the Shan States and Karenni, receiving, among other tributaries from both British and foreign territory, the Nam Pang, the Nam Teng, and the Nam Pawn from the west, and the Nam Ting, the Nam Hka, and the Nam Hsim from the east. After passing the southern limit of Karenni, it forms the boundary between Siam and the Salween District of Lower Burma till a point is reached, at the northern end of Thaton District, where the Thaungyin, the boundary between Burma and Siam farther south, pours into it from the south-east. Southward from this point the Salween passes down the centre of Thaton District, and after receiving the waters of the Yunzalin from the west, and those of the Gyaing and the Attaran from the east, discharges itself, after a course within British territory of about 650 miles, into the Gulf of Martaban below the wooded heights of Moulmein. Of greater length than the Irrawaddy, its narrow rocky bed and frequent rapids render it, unlike that stream, practically useless for the purposes of through navigation, though as a waterway it is of no less value than its eastern sister, the MEKONG. For timber-floating it is freely utilized. Considerable quantities of teak are annually sent down the stream to a station 60 miles above Moulmein, where the logs are stopped, rafted, and taken on to Moulmein for shipment by sea. With the exception of Moulmein no towns of any importance stand on the Salween, and even villages of considerable size are few. The river is not bridged in British territory, but is crossed at intervals by ferries. Of these the most important are the Kun Long, close to a point once selected as the terminus for the Northern Shan States Railway, the Taw Kaw (Kaw ferry) on the main route between Kengtung and the railway, the Taw Maw ferry in Karenni, and the ferries at Kyaukhnyat and Dagwin in Salween District. The Salween has no value for irrigation. Of late

years navigation between Moulmein and the sea has been increasing in difficulty, and the improvement of the channel is in contemplation.

Mekong.—One of the main rivers of Indo-China, rising in Tibet and flowing with a general south-easterly course into the China Sea in French Cochin-China. The greater portion of its channel lies in China, Siam, and the French possessions in Indo-China. For 50 or 100 miles between about 20° 30′ and 21° 30′ N. the river, however, borders on the Shan State of Kengtung, separating that State from French territory; and it may therefore be said to form a portion of the river systems of Burma. Its channel is impeded by rapids, and for navigation it is of no more value than the Salween. Its main tributaries in British territory are the Nam Lwi and the Nam Hkok.

Twante Canal.—A tidal canal, without locks, in Hanthawaddy District, Lower Burma, close to and due west of the city of Rangoon, opened in May, 1883, with the object of improving boat communication between Rangoon and the Irrawaddy. The canal proper is a straight cut connecting the Kanaungto creek, which discharges eastward into the RANGOON RIVER opposite Rangoon, with the Twante creek, discharging westward into the China-Bakīr river. The canal is 7¾ miles in length, and was originally dug to a base width of 25 feet, the bed-level being uniformly 4½ feet above the zero of the tide-tables. Since its construction the width has increased by tidal action, while the depth has been fully maintained by an hydraulic dredger. The average base width is now about 40 feet. The saving in distance effected by the canal is considerable, the river journey from Rangoon to Ma-ubin, which, via the Bassein creek, is 100 miles, being reduced to 45 miles if use is made of the canal. The cost of digging the straight cut opened in 1883 was 1½ lakhs, which may be taken as about half the total capital cost of the work.

Pegu-Sittang Canal.—A navigable canal in Pegu District, Lower Burma, running generally north-east and south-west and connecting the PEGU and SITTANG rivers. The canal was originally begun in 1873–4, and consisted in the first instance of the length from Tāwa, a few miles due south of the town of Pegu, to a village called Minywa. This section joined the Paingkyun and Kyasu creeks; and, as the former flows into the Pegu river and the latter into the Sittang, these rivers were thus connected. In 1878 a lock was built at Tāwa, while the Kyasu creek was closed and the canal was extended to Myitkyo, a village in Pegu District on the Sittang, where another lock

was built. A branch running from Pegu south-eastwards into the main canal at Pagannyaungbin was dug in 1883. The length of the canal from Tāwa to Myitkyo is 38 miles, and the length of the branch is 8 miles. Tolls are levied for the use of the canal by boats or rafts, yielding about a lakh in 1903-4. The total capital expenditure on the work has been about 44 lakhs. A lock at Minywa, 14½ miles from Tāwa, is under construction, which, when completed, will establish communication with the Sittang, 47 miles below Myitkyo. In the construction of the canal advantage was taken of the numerous natural channels which existed. The canal is consequently very irregular in trace and in bed-width. There are four escapes, at Kyaikpadaing, at Pagannyaungbin, at Minywa, and at Abya. The canal is protected from the floods of the Sittang by the Pagaing embankment, which extends from Myitkyo to Tāzon, and from the floods of the Pegu river by the Pegu river embankment. A third barrier, from Zwebat to Moyingyi on the Pagaing embankment, forms a reservoir which will serve to feed the canal in the dry season. The Pagaing embankment incidentally renders cultivation of a large area of land possible, and the Zwebat-Moyingyi embankment will bring further areas under the plough.

Sittang-Kyaikto Canal.—A navigable canal in Thaton District, Lower Burma, 13 miles in length, running north-west and south-east and connecting Wimpadaw on the SITTANG river with Kyaikto, a subdivisional and township head-quarters in the west of Thaton District. The canal was commenced in 1882-3, and was opened to traffic towards the close of 1893, having cost about 10 lakhs. In 1894 the lock at Wimpadaw collapsed, and a new lock was built at Mopalin on the Sittang in 1897. There is also a lock at Kyaikto. An attempt was made to extend the canal eastwards, with a view to carrying it on to Moulmein, but the erosion of the sea-coast in the neighbourhood caused the project to be abandoned.

Mandalay Canal.—An irrigation canal in Mandalay District, Upper Burma, running north and south, parallel to the Irrawaddy, and watering a level plain in the centre of the District, which is bounded on the north by the Madaya stream, on the south by the Myitnge river, on the east by the Shan Hills, and on the west by the Irrawaddy. The canal, which derives its water from the Madaya stream, is 39 miles in length, has 86 miles of distributaries, and is capable of irrigating 80,000 acres of land. It was commenced in 1896 and was opened in 1902, its cost having been nearly 51 lakhs. It

irrigated 30,000 acres in 1903–4. It waters much the same country as a canal dug for irrigation during Burmese rule, which, owing to faulty alignment and the inability of the Burmans to deal with the cross-drainage from the Shan Hills in the east, failed of its object. The revenue derived from the work in 1903–4 was nearly a lakh.

Akhas.—A hill tribe inhabiting the uplands of the Shan States of Kengtung in the extreme east of Burma, and known to the Shans as Kaws. They are the most widely spread community in Kengtung, and in 1901 numbered 26,020 persons. Judged by their language, which possesses no Mon-Anam or Chinese characteristics, the Akhas are probably of Tibeto-Burman origin, and seem to be connected with the trans-Mekong Panna and Lote. They have long been in contact with the Chinese, occasionally intermarry with them, know the Chinese language, and wear a modified pigtail, but are racially quite distinct. Compared with their neighbours they are tall and dark, and the cast of their features is less typically Mongolian than that of many of the surrounding races. The men's dress differs but little from that of the Shans and Chinese; the women have a dress of their own, which varies from clan to clan, but of which the most characteristic features are a very short coat, and equally short kilt, cloth leggings, and a head-dress of bamboo framework elaborately decorated. The Akhas cultivate cotton and the opium poppy. Their villages are built at a considerable elevation above the ground, though not at the height chosen by some of the neighbouring hill tribes. Their houses are of small dimensions and squalid. They are great dog-eaters, and do not confine their attentions to any particular canine breed, as the majority of dog-eating communities do. The religion of the Akhas is spirit- or ancestor-worship, and offerings to the dead are made at their festivals. The dead are buried and buffaloes are slaughtered at funerals. Their marriage customs are primitive, and unions with persons of other than Akha stock are not unknown. The Akös, a tribe inhabiting portions of Kengtung, differ somewhat in physical characteristics, in dress, and in language from the Akhas, but are probably connected with them racially. The Akös numbered 1,506 in 1901.

Danus.—A hybrid Shan-Burmese community inhabiting the border-land between the Shan States and Upper Burma, for the most part between the 21st and 23rd parallels of N. latitude. In 1901 the Danus numbered 63,549, the majority having been enumerated in Mandalay District and the Northern and

Southern Shan States. They are often divided, according to the language which they speak, into Burmese Danus and Shan Danus. In dress the Danus resemble the communities, Shan or Burmese, among whom they live, and they are, like their neighbours, Buddhists. The origin of the name Danu is doubtful; the people are probably a comparatively modern product and have never had any separate political identity. The Danus must not be confounded with the Danaws, an almost extinct tribe, whose habitat lies for the most part in the Myelat division of the Southern Shan States, and whose language points to their being of Mon-Anam stock.

Inthas.—A tribe scattered over the western and south-western portions of the Southern Shan States, Burma, and found in greatest number near Fort Stedman in the State of Yawnghwe. In dress and appearance the Inthas closely resemble the Shans among whom they live, and to whom they are known as Anghsa. They are mainly distinguishable from their neighbours by their dialect, which is not Shan, but appears to be an archaic form of Burmese, closely resembling Arakanese or Tavoyan. This resemblance has given rise to the theory that the Inthas originally came from Arakan. It seems, however, more probable that they are the descendants of one of the branches which broke off from the main Burmese stock about the same time that the Arakanese migrated to the western coast from the Irrawaddy. The early chronicles of the Tagaung kings refer to the separation of the Arakanese from the parent stem, and allude to the migration somewhat later of other parties, one of which went east and settled in what are now the Shan States. If the progeny of this party still exist, it is among the Inthas and Taungyos of the Shan States that they will probably be found. The Inthas are Buddhists. In 1901 they numbered 50,478 in the regularly enumerated areas, and it was calculated that there were about 700 in the 'estimated' areas of Karenni. At Fort Stedman they have a custom of building their houses over the water of the adjoining lake, sometimes at a very considerable distance from the shore. This practice has given them their name of Intha ('lake-dweller'). Their habit of rowing standing up and using the crook of their knees as a rowlock is peculiar.

Kachins.—A community of Tibeto-Burman origin, inhabiting the north and north-east of Upper Burma and the Shan States. After the Shans and the Chins, the Kachins, known also as Chingpaws or Theinbaws, are the most numerous non-Burman people in the Upper Province. In 1901, 64,405

persons were returned as Kachins, but this includes only the population dealt with in the regularly enumerated areas. In what were known as the 'estimated' areas no race data were collected; but it is certain that at least three-eighths of the 127,011 persons inhabiting these areas were Kachins, and it will be safe to put the total of the race at nearly 120,000 About one-half of the population of Myitkyinā District Kachin, and Kachins form a substantial portion of the inhabitants of Bhamo, Kathā, and the Ruby Mines, and of the Northern Shan States. Of the same primaeval stock as the Burmans and the Tibetans, the Kachins seem to have remained for centuries in possession of the uplands about and to the north of the head-waters of the western branch of the Irrawaddy, and it is only within the last few decades that they have encroached on their neighbours in the south. Of recent years, however, observers have had an opportunity of witnessing in the Kachins what in all probability will be the last of those immigration waves from the north that have played so important a part in the history of the Indo-Chinese Peninsula. The Kachin tribes have penetrated westwards into Assam, where they are known as Singphos, and as far down the valley of the Irrawaddy as Kathā District; but here they appear for the time being to have been brought to a halt by contact with a comparatively dense population. Though checked in one direction, the southward movement still continues. The line of least resistance has now shifted to the east; the borders of the Northern Shan States, till recently inhabited only by Shans and Palaungs, have been gradually overrun; and in the direction of China the Kachins have worked their way as far south as the trans-Salween State of Kengtung. The next few years will probably see a further extension of the race in a southerly direction. The Kachins have given considerable trouble on the frontier in the past, and more than one punitive expedition has had to be sent against them.

Strictly speaking Chingpaw is the name given only to the southern section of the Kachin race, the communities farther north being known generally as Khakus. The social system of the Kachins is tribal, but nothing approaching to tribal federation is known. The five principal tribes are the Marips, the Lepais, the Lahtawngs, the 'Nkhums, and the Marans. Subdivisions, clans, and families abound. About one hundred family names have been recorded, and persons bearing the same family name do not intermarry. The Kachins are practically all spirit-worshippers, and their *nats* are extremely

numerous and, for the most part, malignant. The Kachin places himself *en rapport* with the spirit world through the offices of a medium (*mi-twe*) or a professional priest (*tumsa*). Divination is frequently resorted to by this very superstitious race. The dead are disposed of by burial. *Taungya* (shifting cultivation) is the usual form of agriculture practised in the Kachin country, rice being the main crop. The Kachin house is ordinarily far larger than a Burmese or Shan dwelling, and has many points of resemblance to the lengthy structure seen in some Palaung villages. Slavery still exists among the Kachins, but only to the modified extent in which it survives among the Chins of the Chin Hills. The Kachin physical type varies considerably. Though the physiognomy is Mongolian and often of a character far from attractive to the European, aquiline noses are not unknown and regular features are occasionally met with. The figure is short but wiry. There is nothing very distinctive about the dress of the Kachin men. They wear as a rule a dark jacket, a waistcloth (frequently of a plaid pattern) or Shan trousers according to their habitat, and a turban varying from locality to locality. The women ordinarily wear a jacket, sometimes long with long sleeves, sometimes short and practically sleeveless, as well as a skirt and turban, which, in the case of Chingpaw women, is often of considerable size. Wherever the means of the wearer allow it, silver torques are worn by the Chingpaw women. The Kachins speak a language belonging to the same linguistic sub-family as Burmese, and resembling the latter closely in grammatical structure. It has various dialects, but they do not differ materially from one another. The Marus, the Szis, and the Lashis, hill tribes of the north-eastern frontier, have been looked upon as Kachins, whom they resemble somewhat in manners and dress. It appears, however, probable from their language that these tribes are more nearly connected with the Burmans than with the Kachins. Their original home was probably to the east of that of the Kachins.

Kadus.—An Upper Burmese tribe inhabiting the central portion of the watershed that separates the Irrawaddy from the Chindwin river. In 1901 the tribe numbered 34,629, nearly all of whom were inhabitants of Kathā District. The origin of the Kadus is doubtful; but, judging by their language and habitat, it seems probable that they are descendants of hill tribes who have intermarried with the surrounding Shan and Burmese population and have by some means acquired a tribal identity of their own. Their speech is a mixture of

Burmese, Shan, and Kachin, but is now gradually dropping out of use, and will doubtless soon become obsolete. In dress the Kadus used to differ somewhat from their neighbours; but only the elder women now adhere to the tribal costume, which consists of a wholly black or dark-blue jacket, petticoat, and head-cloth. Burmese dress has become almost universal. The practice of staining the teeth of the women appears to have been followed in the past, but the custom is dying out. The Kadus are Buddhists. They have two main subdivisions, known as the *Apwa* (male) and the *Ama* (female), but the distinction has been obliterated by intermarriage. They are believed to be connected with the Saks or Thets, an almost extinct tribe of Arakan. It is possible that they are allied to the Tamans, a probably hybrid tribe of the Upper Chindwin District.

Karens.—A collection of Indo-Chinese tribes, the representatives in Burma of one of the smaller immigration waves that entered the country from the direction of south-western China during prehistoric times. The arrival of the Karens in the country in all probability preceded that of the Tai (Shans), and may possibly have been earlier than that of the Burmans. It is more probable, however, that they appeared after the latter, and in any case there is reason to believe that they were later comers than the representatives of the Mon-Anam races. The Karens may be divided into three main divisions: the Sgaw, the Pwo, and the Bghai. The Sgaw and Pwo are generally looked upon as the Karens proper. They are found down the whole of the eastern border of Lower Burma, from Toungoo to Mergui, in the delta of the Irrawaddy and in the Pegu Yoma; in fact it is only in the Arakan Division, in Rangoon, and in the Districts of Prome and Thayetmyo that they do not form an important section of the community in the Lower province. They are most numerous in the Districts of Thaton, Myaungmya, and Toungoo. In 1901, 86,434 persons were returned as Sgaw-Karens, and 174,070 as Pwo-Karens, a total of 457,355 having been shown as Karens with no division specified. These last were practically all either Sgaw or Pwo, probably more of the former than of the latter.

The Karens are for the most part hill-dwellers, but a very considerable proportion of them are now permanently settled in the plains. The Sgaw plain-dwellers are often known as Burmese Karens, and the Pwo as Talaing Karens. In physique there is no great difference between the Karens of Lower Burma and their Burman and Talaing neighbours; they are

not exceptionally flat-faced, and sharp features are frequently met with. Their eyes are not oblique, like those of the Chinese. In dress they have to some extent adopted the style of the people in whose neighbourhood they live. The typical Karen garment, where the national dress is still worn, is the *thindaing* or smock, a long, sleeveless or almost sleeveless garment, which is slipped over the head and falls away from the neck, leaving a V-shaped opening in front and behind. Where this is worn it forms the sole upper garment of the men, boys, and unmarried girls. In the case of married women the *thindaing* is shorter, is often highly decorated, and is worn over a skirt. Clan distinctions were, and to a certain extent still are, indicated by differences in dress, as for instance in the embroidery on the hem of the men's smocks. The typical hill Karen house, like that of the Kachin, is far longer and larger than that built by the people of the plains. The Karens practise agriculture, their cultivation, when resident in the hills, being of the ordinary *taungya* description. They are excellent foresters, and ever since the annexation of Pegu their relations with the Forest department have been intimate. The original religion of the Karens was spirit-worship, and a considerable number still hold by their old faith; but some have embraced Buddhism and a large proportion of them have become Christians. In their spontaneous readiness to accept Christianity they are probably unique among the more backward races of Asia. The Karens have been enlisted to some extent in the Burma military police. At one time a battalion was recruited entirely from the Karens; but a riot that occurred in its ranks in 1899 led to its abolition as a separate unit, and to the distribution of the companies of which it was composed over other battalions. The two main divisions of the Karens proper have dialects of their own which differ very considerably. It is probable that the Sgaw dialect will in time supersede the Pwo for educational purposes. The language is tonal, and belongs to the Siamese-Chinese sub-family of the Indo-Chinese family.

Of the Bghai division of the Karen race the Red Karens of Karenni have hitherto been the best known. Other representatives of this division are called Padaungs, Bres, Zayeins, Sawngtüng Karens, Loilong Karens, White Karens, and the like. The Bghai inhabit the south-western corner of the Shan States, between 18° 30′ and 20° 30′ N. They were found mostly in the 'estimated' areas in 1901, and the precise strength of the different tribes is not exactly known. The total of Red Karens would appear, however, to be above

29,000, that of the Padaungs between 9,000 and 10,000, and that of the Bres about 3,500. Most of the Zayeins live in territory that was regularly enumerated, and aggregated 4,440. The Bghai tribes vary considerably in language, customs, and dress. The male costume consists as a rule of short trousers and a jacket or blanket; the female costume, of a short kilt with either a short smock or, in the case of the Red Karen women, of a single piece of cloth, draped over the upper portion of the body. Leg and neck ornaments are common among the women, the former being specially noticeable in Karenni in the shape of beaded garters, the latter in the Padaung country, where the women lengthen their necks artificially by means of a succession of brass rings which is added to year by year. All the Bghai are spirit-worshippers, and the majority of them are at a lower stage of civilization than the Karens of Lower Burma. The Bghai dialects, though differing, are probably all variants of a common speech.

Palaungs.—A Mon-Anam hill people found mostly in the uplands to the north of the Northern Shan States, and in the east of the Ruby Mines District of Upper Burma. The Northern Shan State of Tawngpeng may be looked upon as the centre of the Palaung country. The majority of the inhabitants of the State are Palaungs, the Sawbwa is a Palaung, and most of the scattered Palaung tribes found outside the State claim to have come originally from within its limits. Among the Shans the name for the Palaungs is Kunloi ('highlanders'); their name for themselves is Ta'ang. The main division of the people is into Palaungs proper and Pales. The Palaungs proper are confined to the country immediately surrounding Namhsan, the capital of Tawngpeng; all clans outside this limited area are, properly speaking, Pales. No distinction was made between Palaungs proper and Pales at the Census of 1901. The total of Palaungs enumerated was 56,866, of whom about half were inhabitants of the Northern Shan States. In addition, about 7,500 were found in the 'estimated' areas of North Hsenwi. The Palaungs are Buddhists, and very zealous in their support of the priesthood. As a people they are peaceable and retiring, and neither mix nor intermarry freely with their Shan neighbours. The men have adopted the Shan dress; the women wear ordinarily a jacket, skirt, hood, and cloth leggings. The full dress, especially in the case of the Katurr and other pure Palaung clans, is elaborate and very brightly coloured, velvet figuring largely in its composition. The distinctive feature of the Pale women's attire is the skirt,

striped horizontally in red and blue, the width of the stripes varying, with the clan, from an inch to a foot or more. The Pale woman's hood is ordinarily white, and smaller than the full-dress hood of the Palaung. In some of the Pale clans living farthest from Tawngpeng no hood is worn by the women; occasionally the head-dress is a bag, not unlike a stocking cap, into which the head is inserted. Coiffure varies; in full dress girls occasionally wear their hair over their shoulders; the Kwanhai women part their hair in the middle; in almost every clan a considerable proportion of the elderly females are close cropped. The Palaungs build their villages almost invariably at a considerable elevation above the ground. Their houses are sometimes of a very large size and accommodate several families. They practise *taungya* (shifting cultivation), but are best known for their culture of tea, for which the hills of Tawngpeng and the surrounding country are admirably adapted. The greater part of the indigenous tea industry east of the Irrawaddy is in their hands. The Palaung language belongs to the Mon-Anam sub-family; it is isolating, atonic, and full of gutturals, and is closely allied to the vernaculars of the Was of trans-Salween territory, the Riangs of the Southern Shan States, and the Hkamuks of Siam. There are various dialects, but no great divergence of speech.

[C. C. Lowis, *A Note on the Palaungs* (Rangoon, 1906).]

Talaings.—The remnant left of the Peguan or Mon race, which from the beginnings of Burmese history peopled the southern portion of Burma, and was in constant opposition to the kingdoms of Prome, Pagan, and Toungoo. The Talaings belong to a totally different ethnical branch from the majority of the inhabitants of Burma, i. e. they are of Mon-Anam and not of Tibeto-Burman origin. They come of the same prehistoric stock as the Was, the Palaungs, and the Riangs of the Shan States, the Khmers of Cambodia, and the Hkamuks of Siam; but their connexion with these tribes is probably remote. After having more than once gained the upper hand in Burma, they were finally conquered by the Burmans shortly before the British began to take an active political interest in the affairs of the country, and about sixty years before the East India Company acquired any territory within its limits; and since then they have been largely absorbed into the Burmese population. In 1901 the number of persons who returned themselves as Talaings was 321,898; in 1891 it had been nearly half as great again. The Talaings are now numerous only in the country round the mouths of the Irra-

waddy, the Salween, and the Sittang, which adjoins the ancient Mon capitals of PEGU and THATON. In Amherst District, where they number 132,285, they constitute nearly half the total. Like the Burmans, they are Buddhists; and in customs, pursuits, dress, and physical characteristics they are now practically indistinguishable from the Burmese population among whom they live. The Talaing language has been placed in the north Cambodian group of the Mon-Anam family. It has no tones, and is somewhat more guttural than Burmese, from which it differs considerably in structure. As a vernacular, it is being slowly superseded by Burmese. Of the Talaings in 1901 only 155,100, or less than half, retained Talaing as the language ordinarily used by them. The origin of the name Talaing, which was bestowed upon the race by their Burmese conquerors, is doubtful. The theory deriving it from Talinga (a name said to have been given to the race on account of the admixture of immigrant Telugu blood from Madras) seems open to question. The Talaings call themselves Mun.

Taungthus ('Hill people').—A tribe of Karen origin, inhabiting the eastern border of Burma and the western border and centre of the Southern Shan States. In 1901 the Taungthus numbered 168,301. They are a widely scattered people, being found all along the eastern highlands between 16° and 22° N. latitude; but their two main centres are in the country round about the lower reaches of the Salween, and in the neighbourhood of the Southern Shan State of Hsahtung, the *Myoza* or administrator of which is a Taungthu. Amherst and Thaton are the two Lower Burma Districts which contain most Taungthus. The latter District is said to have been their original home; and one of their legends has it that when in the eleventh century the king of Thaton was carried away captive to Upper Burma and his kingdom was broken up, a number of Taungthus went north and founded a new Thaton (Hsahtung) in the Shan States. The Taungthus speak a language which is closely allied to Karen. Their name for themselves is Pa-o. They are a sturdy, thickset race, swarthier in the south than their neighbours. The men dress like Shans, in the ordinary jacket and loose trousers. The women have, as is the general rule among the eastern hill tribes, a costume of their own. The upper garment resembles the Karen *thindaing* or sleeveless smock, and in Thaton is of dark blue cloth trimmed with red; under this are worn a skirt reaching to the knee, and usually leggings of cloth, though these are dispensed with in the south. The head-dress consists of a turban of tasselled cloth, which

is held in position with hairpins and silver bands. The Taungthus are nominally Buddhists and have monasteries; but spirit-worship is very rife among them, and village and house *nats* are regularly propitiated. They have a written character, differing in this respect from all the eastern highlanders, with the single exception, perhaps, of the Lolos.

Was.—A hill people of Mon-Anam extraction inhabiting for the most part the northern half of the trans-Salween British Shan States. The residents of the remoter portions of the Wa tracts, known as the Wild Was, are in many ways at a very low stage of civilization. Their resentment of interference and their savage habits, of which the practice of cutting off the heads of human victims is the most notorious, have led to their being left a good deal to themselves in the past, and no attempt was made to enumerate them in 1901, so that their precise numbers are not known. There are, however, a fairly large proportion of Was outside the omitted census areas, mostly in the Southern Shan State of Kengtung. These were for the most part enumerated under other names, such as Tai Loi (15,660), Hsen Hsum (1,351), and the like; those returned as Was numbering only 5,964. Taken altogether the representatives of the Wa race, inclusive of the inhabitants of the omitted areas, are probably in excess of 50,000. The Was proper are largely spirit-worshippers, and there seems to be no reason to doubt that their custom of cutting off heads has a religious basis. Even those who call themselves Buddhists are so only in name. In the case of the Tai Loi, the En, the Hsen Hsum, and the other Wa tribes of Kengtung, on the other hand, the Buddhism professed is more real. The Was are good agriculturists and cultivate the opium poppy largely. In person the real Wa is ordinarily darker than his Shan neighbours, and his swarthiness is enhanced by the dirt that usually clings to him. The Wa's dress is at all times scanty, and consists at best of little more than an exiguous loin-cloth, while it is said that during the hot season both men and women occasionally dispense altogether with clothing. The Wild Was' villages are usually roughly fortified, and have frequently only one entrance through a covered or tunnelled way. The Wa language belongs to the Mon-Anam sub-family, and is closely allied to the speech of the Palaungs to the west of the Salween, and of the Hkamuks east of the Salween in Siamese territory. The Wa tribes of Kengtung mentioned above speak dialects of their own, differing from the Wa of the Northern Shan States.

ARAKAN DIVISION

Arakan Division.—A Division of Lower Burma, lying between 17° 15′ and 22° 30′ N. and 92° 11′ and 94° 52′ E., with an area of 18,540 square miles. It is the most westerly of the four Lower Burma Divisions, and consists of a narrow strip of territory running down the eastern coast of the Bay of Bengal, from the southern limit of the Chittagong Division of Eastern Bengal and Assam to within 90 miles of Cape Negrais, and bounded on the east by the Arakan Yoma. Its population has increased from 484,963 in 1872 to 588,600 in 1881, 673,274 in 1891, and 762,102 in 1901. The head-quarters are at AKYAB TOWN, and it contains the following Districts:—

District.	Area in square miles.	Population in 1901.	Land revenue, 1903-4, in thousands of rupees.
Akyab . .	5,136	481,666	14,20
Northern Arakan	5,233*	20,682	7
Kyaukpyu . .	4,387	168,827	2,37
Sandoway . .	3,784	90,927	1,12
Total	18,540	762,102	17,76

* Including unadministered tracts.

Of the total population in 1901, 511,635 were Buddhists, 70,872 Animists, 162,754 Musalmāns, 15,367 Hindus, and 1,372 Christians. The density of population was 41 persons per square mile, as compared with 44 for Burma as a whole. The Division contains 4,143 villages and 3 towns; but AKYAB (population, 35,680) is the only place of considerable importance.

The majority of the inhabitants are Arakanese, descendants of the race which inhabited the ancient kingdom of Arakan. The Arakanese broke off from the Burmese in the early days of the Christian era, soon after the foundation of the early dynasty of Tagaung, and were not finally absorbed into the Burmese kingdom till towards the close of the eighteenth century. In 1901, 405,143 persons in Burma were returned as Arakanese, the number at the previous Census having been

354,319. Of the total, 397,353 were in the Arakan Division. Outwardly the Arakanese closely resemble the Burmans; what little difference there is in the physical type has been brought about by the closer contact the former have had with the Indian people of Chittagong. The same circumstance accounts for the approximation of some of the Arakanese customs (e. g. in the matter of seclusion of women) to those of the Bengalis. The dress is the ordinary Burmese costume. Tattooing is less frequently resorted to than among the Burmans. Though there are some Musalmāns among them, the great majority of the Arakanese profess Buddhism. The Arakanese dialect is practically an archaic form of Burmese; in many cases it must be a close approximation to the speech that was in the mouths of the remote ancestors of both Arakanese and Burmans at the time of the separation of the former from the main stock. Both Burmese and Arakanese have since undergone phonetic decay along divergent lines, with the result that the two languages now sound widely different. The difference lies, however, solely in pronunciation: when the varying sounds are reduced to writing it disappears; vocabulary and syntax are identical. The Arakanese dialect was spoken in 1901 by 383,400 persons in Burma, of whom 381,858 were enumerated in the Arakan Division.

The ancient kingdom of Arakan, practically conterminous with the Division, ceased to exist in 1784. Burmese tradition, handed down by a people anxious to connect the religion of Burma with the cradle of the Buddhist faith, has it that the founder was a son of a king of Benares, Sekkyawādi, who was afterwards to be born as Gautama Buddha. But these legends are shadowy and of little value, and it is not till the ninth century that we hear anything definite. In the tenth century the pressure of the rulers of Prome upon Southern Arakan compelled a change of capital from Dwārawadi (near the existing town of Sandoway) to MYOHAUNG, farther north. After five centuries of civil wars and foreign invasions by the tribes across the Yoma, the kingdom became gradually consolidated. In the fifteenth century dynastic struggles brought about a temporary subjection to the throne of Ava; but after 1430 the Arakanese regained their independence, and throughout the sixteenth century repelled the raids of the Burmans from the mountains and the Portuguese from the sea. During the latter half of the sixteenth century Arakan came in contact with the Mughal power, through the conquest of Chittagong, and the Arakanese called in the Portuguese to help them. Their

dubious allies, however, proved to be nothing less than pirates, and had to be expelled from the lands given to them in 1605. On being thus ejected they settled in the island of Sandwīp at the mouth of the Ganges and, having obtained assistance from Goa, attacked Arakan, but were defeated and driven from the country, while the victorious Arakanese began to harry the lowlands of Bengal. The power of Arakan was now at its zenith, but was soon to fall. Aurangzeb, the son of the emperor Shāh Jahān, who had driven his brother Shāh Shujā with all his family from Bengal into the hands of the king of Arakan, determined to avenge the extirpation of his kinsfolk by that king; and his viceroy, with the aid of the Portuguese, utterly crushed the power of Arakan, which was further weakened by internal dissensions, and succumbed to the throne of Ava in 1784. It is probable that this conquest would have been only temporary had no other power been involved. As it was, the refusal of the East India Company's officials to surrender the Arakanese refugees who had been driven out of their country brought the conquerors into conflict with a mightier than Arakan. A series of minor aggressions culminated in the seizure by the Burmans of the island of Shāhpuri, between Akyab and Bengal, and war was declared in 1824. After fighting near Myohaung, Arakan was cleared of Burmese troops and became a British possession by the Treaty of Yandabo in 1826.

Akyab District contains a few features of historical interest, snch as MYOHAUNG, or Mrohaung, the old capital of Arakan, and the Mahamuni pagoda; and Sandoway boasts of several shrines of importance. On the whole, however, the kingdom of Arakan has left to posterity but few indications of its former greatness.

Akyab District (*Sit-twe*).—Coast District in the Arakan Division of Lower Burma, lying between 19° 47′ and 21° 27′ N. and 92° 11′ and 93° 58′ E., with an area of 5,136 square miles. It is bounded on the north by Chittagong and Northern Arakan; on the east by Northern Arakan and the Arakan Yoma; on the south-east by Kyaukpyu District; and on the south and west by the Bay of Bengal and the Naaf estuary.

Boundaries, configuration, and hill and river systems.

The District consists of the level tract lying between the sea and the ARAKAN YOMA, and of the broken country formed by the western spurs of that range and the valleys which cover the portion east of the Lemro river. A pass leading across the range connects the District with Upper Burma, but it is difficult and is rarely used. The northern portion of the District is also

covered by hills, from which three low ranges detach themselves and run southward. In the west, between the Naaf and the Mayu rivers and terminating near the mouth of the latter, is the steep Mayu range, the southern part of which lies parallel with, and not far from, the coast. Between the Kaladan and Mayu rivers two similar ridges run parallel to each other to within about 30 miles of Akyab on the coast. The rivers in general flow from north to south, being separated from each other by abrupt high watersheds. The three principal streams are the Mayu, the Kaladan, and the Lemro, which flow from the northern hills as mountain torrents, but spread out on the plains into a network of tidal channels. The KALADAN is the largest and most important river in Arakan. Rising in the Chin Hills, it runs nearly due south through the Arakan Hill Tracts and Akyab District, receiving the waters of a large number of tributaries in its course, and enters the sea at Akyab, where its estuary is 6 miles in breadth, and forms the harbour of the town. The Lemro river is the second in importance. It receives the whole drainage of the western slope of the Arakan Yoma, passes along the eastern side of Northern Arakan and Akyab Districts, and flows into the Bay of Bengal south of Akyab town. The Mayu flows to the west of the Kaladan, and west of the Mayu again is the Naaf stream, which forms part of the boundary between Akyab and Chittagong. There are a few islands along the coast, of which the best known are the Boronga Islands at the mouth of the Kaladan, whence petroleum is obtained.

Geology. Geologically the District, beyond the alluvium which skirts the coast, may be divided into three distinct belts: namely, the Cretaceous (Ma-i group), embracing the outer spurs of the Yoma; the Eocene of the Lower Tertiary (Negrais rocks); and the Triassic beds (axial group), forming the crest of the Yoma, with an outcrop on the western side of about 10 miles in breadth. These three classes of rocks are very closely allied. They are all composed of shales and sandstones intersected by bands of limestone, but the Cretaceous beds are less hardened and metamorphosed than the other two.

Botany. The coast and tidal creeks are bordered by stretches of mangrove and *dani* palm (*Nipa fruticans*). The constituent trees of the tidal forests are described in the botany paragraph of HANTHAWADDY DISTRICT. The sandstone ridges opposite Akyab are covered with upper mixed forest, containing abundance of *Xylia dolabriformis*, but no teak. *Melocanna baccifera* is plentiful in some localities. Evergreen forests occur

here and there, especially on Boronga Island. Inland are the prolongations of the Arakan Hill Tracts, clothed with forest vegetation of the type described under NORTHERN ARAKAN. Farther east are the western slopes of the Arakan Yoma, covered with dense forest and bamboo jungle, as yet unexplored by the botanist.

The most important wild animals are elephants, bison, tigers, and leopards (including the black variety). *Sāmbar* are plentiful on the hill-sides, hog deer are common in the low-lying jungle, and barking-deer are to be met with throughout the District. Wild hogs abound and, contrary to the usual rule in Burma, the jackal is found everywhere. Fauna.

Owing to proximity to the sea, the same extremes of heat and cold are not met with as in Upper Burma. The cold season, from December to February, is the pleasantest part of the year. The wet season is trying, and the hot season is oppressive, although the actual temperature recorded is not extreme. The average maximum temperature for the whole year is 86° and the average minimum 74°, the average mean being 78°. Climate and temperature.

The rainfall is heavy, amounting to 180 inches in 1903-4, and varying from 173 inches at Maungdaw to 203 at Akyab itself. Rainfall.

The District has from time to time been visited by severe cyclones. A devastating storm occurred on November 13, 1868, and on May 17, 1884, a cyclone of very similar character caused great destruction of property. There was another severe storm on April 25, 1895, but the damage caused was not so great as in 1884.

The District formed part of the kingdom of Arakan, and its earlier fortunes are included in the history of that kingdom (see ARAKAN DIVISION). During the first Burmese War, in 1825, a body of troops under General Morrison crossed the Naaf from Chittagong, and, co-operating with a flotilla that had come up the Kaladan, attacked the town of Myohaung or Old Arakan. The force was repulsed with some loss in the pass leading to Myohaung from the hills, but eventually a turning movement caused the Burmans to evacuate their position in the pass, and finally to retreat across the Yoma. Akyab became British with the rest of Arakan at the termination of the war in 1826. At MYOHAUNG are to be found the most important archaeological remains in Arakan. The ruins in their present state date chiefly from the fifteenth and sixteenth centuries. At Mahamuni, in the Kyauktaw township, is a History and archaeology.

pagoda, once famous as the receptacle of an image of Gautama of great sanctity, which on the conquest of Arakan, in 1784, was removed by the victorious Burmans from Mahamuni to Amarapura and enshrined there. It is now in the Arakan pagoda at MANDALAY.

The people.

The population of the District has steadily increased. At the last four enumerations it was: (1872) 276,671, (1881) 359,706, (1891) 416,305, (1901) 481,666. Its distribution in 1901 is shown in the following table:—

Township.	Area in square miles.	Number of		Population.	Population per square mile.	Percentage of variation in population between 1891 and 1901.	Number of persons able to read and write.
		Towns.	Villages.				
Akyab . .	62	1	60	47,427	765	− 2	13,565
Rathedaung* .	1,269	...	545	113,098	88	+ 22	14,203
Ponnagyun .	704	...	290	49,555	70	+ 11	11,094
Pauktaw . .	496	...	190	43,395	87	+ 6	12,224
Minbya . .	480	...	295	41,663	87	+ 17	8,675
Kyauktaw . .	370	...	312	53,303	144	+ 18	8,258
Myohaung. .	1,329	...	282	49,978	37	+ 15	11,816
Maungdaw .	426	...	377	83,247	195	+ 27	3,905
District total	5,136	1	2,351	481,666	94	+ 16	83,740

* Split up in 1906 into Rathedaung and Buthidaung. For details, see RATHEDAUNG.

Portions of the District are hilly and sparsely populated; and thus, though in the lowlands the population is very dense, the District as a whole contains only 94 persons per square mile. The head-quarters are at AKYAB TOWN. The majority of the inhabitants are Buddhists (280,000), but a very considerable proportion (155,200) are Musalmāns; in fact, nearly half the Muhammadan population of the Province in 1901 resided within Akyab District. The number of Animists (31,700) is high, and Hindus numbered 14,000 in 1901. Arakanese is spoken by a little over half the population, and Bengali by about one-third.

Race and occupation.

Of races, the Arakanese (239,600) showed the highest aggregate in 1901. The Burmans were only 35,800 in number, the Kamis 11,600, the Mros 10,100, and the Chins 9,400. The three last are hill tribes who inhabit the north and east of the District. Other indigenous tribes are the Daingnets (3,400), a probably hybrid people living on the borders of Chittagong, and speaking a corrupt form of Bengali; and the Chaungthas (250) and Thets (230), communities of Chin and Arakanese-

Chin origin. The greater part of the non-Arakanese element is foreign. More than 150,000 of the inhabitants are Bengalis, or the offspring of Bengalis, from the adjacent District of Chittagong. In 1901 the population dependent on agriculture was 350,100, or 72 per cent. of the total. About one-tenth of the total is dependent on *taungya* (shifting) cultivation.

Christian missions.

The number of Christians in 1901 was 720, of whom 230 were natives. Roman Catholics form nearly half the total. There is a Roman Catholic mission in Akyab town, which, since 1888, has been under the charge of the Fathers of the Congregation of the Holy Cross. A convent school founded in 1889 in connexion with the mission has nearly 100 pupils.

General agricultural conditions.

Throughout the whole of the District the conditions of agriculture, so far as soil and rainfall are concerned, are easy in the extreme. The soils are loams, more or less sandy, and there are few clays. The land is usually very fertile, and the abundant rainfall allows even high-lying and sandy ground to yield a good out-turn in a normal year. The land in the delta and on the banks of the principal rivers is level, low-lying, and suitable for rice; the higher land and undulating country at the foot of the hills is better adapted for garden and miscellaneous crops, and for grazing; while on the hills themselves only *taungya* (shifting) cultivation is carried on. On lands that are occasionally flooded by the tide it is not considered necessary even to plough. Owing to the abundant rainfall, irrigation is not practised, except on a very small scale, in the dry season, for the benefit of gardens which happen to be near a supply of water. In the settled area the methods of cultivation differ little from those obtaining in other parts of Lower Burma. Transplanting of rice is practically unknown, and the seed is sown broadcast on the rich muddy levels.

Two features which make agriculture less profitable than might be expected are the laziness of the cultivator and the prevalence of cattle-disease. The amount of labour hired is very great, and in some cases the Arakanese cultivator even pays a manager to superintend his coolies, though as a rule he condescends to do his own supervision. The cost of cultivation in Akyab is higher than in most parts of Lower Burma. The wasteful system of *taungya*, or shifting cultivation, still prevails in the hills, and is responsible for the destruction of a vast amount of forest.

Chief agricul-

The area under cultivation was 575 square miles in 1881, 877 square miles in 1891, and 953 square miles in 1901. The

tural statistics and principal crops.

main agricultural statistics for 1903-4 are given below, in square miles :—

Township.	Total area.	Cultivated.
Akyab	62	30
Rathedaung	1,269	237
Ponnagyun	704	106
Pauktaw	496	127
Minbya	480	104
Kyauktaw	370	116
Myohaung	1,329	152
Maungdaw	426	128
Total	5,136	1,000

The principal crop is rice, covering 931 square miles in 1903-4. It is all of the *kaukkyi* or cold-season variety; no *mayin* or hot-season rice is grown. Tobacco and sugar-cane are little cultivated, except on the Lemro, east of Myohaung. There are 32 square miles of garden cultivation, for the most part in the Rathedaung, Maungdaw, and Myohaung townships. Chillies cover 4,000 acres, half of which are in the Kyauktaw and Rathedaung townships; mustard is grown on about 2,300 acres in the Rathedaung and Maungdaw townships. The area under cotton has decreased rapidly. Flax for making rope is cultivated to a very small extent in Maungdaw. The *dani* palm is grown throughout the tidal region, the leaves being used for thatch, while the fermented juice or sap is the principal intoxicant consumed by the people. The average area of a holding is 9 acres.

Agricultural improvements.

As the figures given above show, the area under cultivation has of late years increased largely. Akyab has proved a paradise to the emigrant from Chittagong, who is of a more frugal and industrious disposition than his Arakanese neighbour, and is steadily ousting the latter as cultivator and landowner. As a very large area of cultivable land is still available, there is every prospect of further rapid extension of cultivation. Good land being plentiful in ordinary years, there has been little scope for agricultural advances.

Cattle, &c.

The buffaloes bred locally are, as a rule, superior to the plough bullocks. The price of an average plough buffalo has been estimated at Rs. 75 and that of a bullock at Rs. 45. Sheep breeding is not practised; but goats are reared in numbers, chiefly by people from Chittagong and other natives of India, though no trouble is taken to improve the breeds by selection

or otherwise. The grazing-grounds reserved are small in size, and are scattered throughout the District.

Forests.

The Forest department has only recently extended its operations over the District. There are a few teak plantations, which were started by private enterprise in 1872–4. One at Myauktaung comprises an area of 35 acres, and another at Nagara about 50 acres. The timbers mostly in demand at Akyab, the chief market, are *pyingado* (*Xylia dolabriformis*), *pyinma* (*Lagerstroemia Flos Reginae*), *thitkado* (*Cedrela Toona*), and *kabaung* (*Strychnos Nux-vomica*), on which seignorage is collected by the District officers. The forest receipts in 1903–4 amounted to Rs. 8,800.

Minerals.

There has been no detailed geological survey of the District, and its mineral resources remain to be exploited. Coal is found, but is said to be of an inferior quality, and has not been worked. Tradition has it that there are gold and silver mines in the interior, but they have yet to be located. About 1,000 tons of laterite and sandstone are quarried annually for road-making, and some clay is extracted for making bricks and the rough local pottery.

Oil wells have been worked by two lessees in the Eastern Boronga Island for upwards of twenty years. The annual output has of late been about 50,000 gallons. The usual method of obtaining it is by lowering a metal cylinder with a valve in the bottom, which fills with oil and is then hauled up and emptied. After the water has been allowed to run off, the oil is stored and exported to Akyab town by boat. The oil is disposed of locally, and is used in native lamps without any refining. The depth of the wells varies from 300 to 700 feet, and the boring is done by steam-power.

The salt-boiling industry finds employment for some of the coast population, but the annual production does not exceed 220 tons, or less than one-fifth of the consumption of the District. The methods employed are crude in the extreme. The upper layer of earth, which the tide has impregnated with salt, is collected. The earth is then treated with salt water to dissolve the brine, and the resulting liquid is boiled down in a pan or cauldron till it has evaporated, leaving the salt as a deposit. The local product is of good quality and is preferred to the imported article.

Arts and manufactures.

The chief hand industries are cotton- and silk-weaving, gold and silver work, carpentry, shoemaking, pottery, and iron-work. Weaving is entirely a home industry, and is carried on more or less by the majority of Arakanese women. Locally made hand-

looms are used, and the fabrics are of coarse texture. The silks, however, are noted for their durability, and find a sale in Burma proper. The gold- and silversmiths are chiefly Arakanese, and their workmanship is inferior. The carpenters are Arakanese, or men from Chittagong and Chinese, of whom the last are by far the best. There are a few boat-builders in Akyab town and elsewhere. Shoes for native wear are made by Chinese and natives of India, the leather used in their manufacture being tanned locally. Akyab town possesses two small potteries. The clay used is obtained locally, and the pots manufactured are of poor quality and cannot compete with those imported from Madras. Bricks are made when required, but are of a very inferior description. The blacksmiths come mostly from Chittagong, and their work lacks finish. Coarse mats are woven by Arakanese and people from Chittagong. Speaking generally, the District is singularly poor in artificers of all kinds, and the work turned out is of inferior quality. The only factory industry of importance is rice-milling in Akyab town, where there are also two small tanneries.

Commerce and trade. Paddy and rice are naturally the staple trade products. Akyab is ordinarily the market for the whole District, paddy being brought there in boats from the surrounding rice-growing areas; but when prices in Chittagong are favourable, most of the rice grown in the Maungdaw township is sent there direct, while a few cargoes generally find their way from the Naaf in small native craft to other parts of India. Statistics of the external trade of the District, practically concentrated in AKYAB TOWN, are given in the article on that town. The internal trade is almost entirely water-borne. The Arakanese are being ousted as traders by the Chittagong people, who now control the bulk of the local traffic. Barter is still prevalent among the hill tribes in the remoter portions of the District.

Communications. There is practically no vehicular traffic except in Akyab town and its environs. Outside the town the only metalled cart-road of importance is that from Akyab to Yechanbyin, 9½ miles long, maintained from Provincial funds. A good metalled road, 15 miles in length, leads from Maungdaw on the Naaf to Buthidaung on the Mayu river. The total length of metalled roads, excluding those within the limits of the Akyab municipality, is 40 miles, and of unmetalled roads 160 miles.

The principal means of communication are by water. The steamers of the British India Company call at Akyab once a week for Kyaukpyu, Sandoway (during the fair season), and Rangoon, and once a week for Chittagong and Calcutta. From

February to May, and often later, steamers take cargoes of rice to Indian and other ports. The river steamers of the Arakan Flotilla Company ply on as much of the Kaladan as lies within the District, and through the tidal creeks of the coast. The greater part of the District is intersected by these tidal creeks, and these and the principal rivers are largely used as highways. Practically all articles of merchandise are brought to Akyab town, and distributed from there, in boats of local make, while passengers travel both in these boats and in *sampans* rowed exclusively by Bengalis.

Light-houses. The lighthouse on Savage Island, at the entrance to Akyab harbour, is a stone structure 138 feet high. It was built in 1842, and raised to its present height in 1891. The light is visible for 14 miles. Fourteen miles off the port of Akyab is the Oyster Island lighthouse (20° 5′ N. and 92° 39′ E.). It was first lighted with a permanent light in 1892.

District subdivisions and staff. The District includes four subdivisions, Akyab, Minbya, Kyauktaw, and Buthidaung, the subdivisional officers being usually Extra-Assistant Commissioners, and nine townships, each under a *myo-ok*. The townships are: in the Akyab subdivision, AKYAB, RATHEDAUNG, and PONNAGYUN; in the Minbya subdivision, PAUKTAW and MINBYA; in the Kyauktaw subdivision, KYAUKTAW and MYOHAUNG; and in the Buthidaung subdivision, BUTHIDAUNG and MAUNGDAW. At head-quarters are a treasury officer, an *akunwun* (in subordinate charge of the revenue administration), and a superintendent of land records. An officer of the Royal Indian Marine is Port Officer, Collector of Customs, and Superintendent of Mercantile Marine at Akyab. The Civil Surgeon is also Port Health Officer and Superintendent of the jail, Akyab; and the District forms a subdivision of the Arakan Public Works division, with head-quarters at Akyab. Each village is in immediate charge of its headman, or *ywathugyi*, who is responsible (where there is no circle *thugyi*) for the collection of revenue, and has certain police and petty magisterial powers. The District contains 1,203 *ywathugyi*-ships. The old system by which a number of villages were grouped together for purposes of revenue into a circle, or *taik*, under a circle officer, or *taikthugyi*, is being gradually done away with. There are still, however, 27 circle *thugyis*, who are responsible for the collection of revenue, on which they receive commission, in their circles. Each of them is also headman for the village in which he resides.

Civil justice and crime. The Commissioner of Arakan is Sessions Judge. Up to 1905 the Deputy-Commissioner was District Judge. In that year,

however, a whole-time District Judge was appointed, who hears all civil appeals from township courts and tries all District court cases and cases from the Akyab subdivision of over Rs. 500 in value, and who is also senior magistrate with special powers under section 30 of the Criminal Procedure Code. For Rathedaung *cum* Maungdaw, as also for Kyauktaw *cum* Myohaung, a special township judge is appointed, who sits for half the month at each of the township head-quarters. In Akyab town there are two additional magistrates with first-class powers, who also take up District cases if necessary. A special feature of the criminal returns is the large number of stabbing cases, the Arakanese being prone to the use of the clasp-knife in their quarrels. Opium smuggling is rife, and the number of cases under the opium and excise laws is very considerable. Occasionally there is an outbreak of dacoity.

Revenue administration.

The revenue history of Akyab is a record of steady progress. In 1832 the total revenue collected was 2·5 lakhs. In 1837 the taxes on forest produce, huts, boats, sugar-presses, handicraftsmen, and others, were abolished; but their discontinuance did nothing to arrest the fiscal growth of the District. The tax on fisheries was imposed in 1864–5, and brought in Rs. 6,800 that year. The first recorded settlement took place in 1866–7, when the land revenue assessment produced 5 lakhs. A revision of rates was undertaken in 1879–80, and under the new assessment the revenue rose to 7·7 lakhs. A further revision, the first regular assessment, as opposed to the previous summary settlements, was carried out in 1885–8, when the land revenue increased to 8·3 lakhs. The revenue on rice land for 1902–3, the last year of the enforcement of these rates, amounted to 12 lakhs, showing an increase of 140 per cent. in the thirty-six years since the first settlement, during which interval the area under cultivation had more than doubled. The latest revision, carried out in 1901–2, is expected to yield a further increase of about 25 per cent., and the area under cultivation is still increasing rapidly. The whole of the District has not yet been surveyed. Grants under the Waste Land Rules of 1839–41, which were designed to promote extension of cultivation, are numerous in Akyab. There appear to have been at one time as many as ninety-four such grants; but in many cases the land has since reverted to the possession of Government, and there remain at present forty-two, covering an area of 150 square miles, and paying Rs. 65,000 as revenue and cess. These grants were usually given with twenty-four years' exemption from assessment, after which the rates payable were

10 annas per acre for six years; then Rs. 1–4 per acre for six years; and finally Rs. 1–10 per acre for twelve years, after which a new settlement could be demanded. Revenue is, however, payable on three-fourths of the land only. When the grants were first cadastrally surveyed, it was found that the area actually granted exceeded the recorded area by 83 square miles, a difference largely owing to faulty surveying in the first instance.

The ordinary rates of assessment fixed in 1879–80 varied from 8 annas to Rs. 2–8 per acre of rice land, and at the revision of 1885–8 from Rs. 1–4 to Rs. 3. In the revision recently completed it has been proposed to increase the maximum rate on rice land to Rs. 4 per acre, leaving the minimum unchanged. Outside rice land there were in 1903 only two rates of assessment in the settled area: namely, Rs. 2 per acre on garden land and R. 1 on miscellaneous cultivation. In the unsurveyed portion the rates on garden land vary from Rs. 2–8 to Rs. 1–8, and on miscellaneous cultivation from Rs. 2–4 to R. 1. This gives a maximum rate of Rs. 2–8, a minimum of R. 1, and an average of nearly Rs. 2 per acre.

The growth of revenue since 1880–1 can be seen from the following table, which gives the figures in thousands of rupees:—

	1880–1.	1890–1.	1900–1.	1903–4.
Land revenue .	7,02	9,86	11,85	14,20
Total revenue .	23,36	26,02	26,97	30,97

The figures for 1903–4 include Rs. 4,42,000 capitation tax and Rs. 2,70,000 excise.

Local funds.

There is a District cess fund, the income of which amounted in 1903–4 to Rs. 1,71,000. This fund is provided mainly from a 10 per cent. levy on the total land revenue, and is expended by the Deputy-Commissioner on communications and other local needs. AKYAB TOWN is the only municipality.

Police and jails.

The District contains eight police stations, one at each township head-quarters. Each police station is usually in charge of a head-constable, assisted by one or more sergeants. There are also eight outposts, each in charge of a sergeant or first-grade constable. The strength of the civil police is 10 head constables, 19 sergeants, and 305 rank and file. In addition to the civil police, the District has a detachment of military police from the Rangoon battalion, with a strength of 220 men.

Akyab town contains a District jail, with accommodation for 489 prisoners (459 male and 30 female). The chief industries carried on are carpentry, iron-work, tailoring, stone-breaking, mat-making, paddy-grinding, and cane-work. The products are disposed of to Government departments, the municipality, and private individuals.

Education. In consequence, no doubt, of the large Indian element in the population, Akyab occupies a low place for Burma in the matter of literacy. The proportion of literate persons in 1901 was 28·6 per cent. in the case of males and 3·4 per cent. in that of females, or 17·4 for both sexes together. The proportion of females is considerably below the Provincial average. Owing to the early age at which girls are given in marriage, and the seclusion in which they are usually kept after their tenth year, the majority of them leave school before they have had time to do more than learn the rudiments of reading and writing. The total number of pupils at school increased from 1,863 in 1880–1 to 6,384 in 1890–1, and 12,782 in 1900–1. In 1903–4 there were 6 special, 9 secondary, 258 primary, and 477 elementary (private) schools, with 13,944 male and 957 female pupils. The Akyab high school is the only institution of individual importance. The total expenditure on education in 1903–4 was Rs. 40,000, made up as follows: fees, Rs. 15,700; municipal contributions, Rs. 10,100; Provincial grants, Rs. 7,800; Local grants, Rs. 6,200.

Hospitals and dispensaries. There were till 1905 only two hospitals, with 122 beds in all, and a dispensary. In 1903 the number of cases treated was 42,240, of whom 1,618 were in-patients, and 1,202 operations were performed. The total income was Rs. 26,800, towards which municipal funds contributed Rs. 14,500, Local funds Rs. 6,700, and subscriptions Rs. 3,000. A new hospital has lately (1905) been built by private charity at Buthidaung, and hospitals will shortly be constructed at Minbya and Kyauktaw.

Vaccination. Vaccination is compulsory only in Akyab town. In 1903–4 the number of persons successfully vaccinated was 6,689, representing 14 per 1,000 of population.

[H. Adamson, *Settlement Reports* (1887 and 1888); W. E. Lowry, *Settlement Report* (1903).]

Akyab Subdivision.—Subdivision of Akyab District, Lower Burma, consisting of the Akyab, Rathedaung, and Ponnagyun townships.

Akyab Township.—Township of Akyab District, Lower Burma, lying between 20° 6′ and 20° 16′ N. and 92° 45′ and 92° 56′ E., at the mouth of the Kaladan river. The township

is a very small one, consisting of Akyab town and a stretch of country immediately surrounding it, 62 square miles in area. The population was 48,333 in 1891 and 47,427 in 1901, for the most part centred in Akyab town and port. It contains one town, AKYAB (population, 35,680), the head-quarters of the township and District, and 60 villages. The area cultivated in 1903–4 was 30 square miles, paying Rs. 50,000 land revenue.

Rathedaung.—Township of Akyab District, Lower Burma, lying between 20° 15′ and 21° 27′ N. and 92° 25′ and 92° 52′ E., with an area of 1,269 square miles. The population was 92,933 in 1891 and 113,098 in 1901. It comprises the whole of the valley of the Mayu river, lies for the most part low, and is the most populous and growing township in the District. There are 545 villages, and the head-quarters are at Rathedaung (population, 1,189), on the eastern bank of the Mayu river. The area cultivated in 1903–4 was 237 square miles, paying Rs. 3,67,000 land revenue. The township was split up in 1906 into Rathedaung and BUTHIDAUNG. The reduced charge has an area of 506 square miles and a population (1901) of 53,332.

Ponnagyun.—Central township of Akyab District, Lower Burma, lying between 20° 11′ and 21° N. and 92° 48′ and 93° 6′ E., with an area of 704 square miles. The township is long and narrow, and comprises a considerable portion of the country lying between the Kaladan and Mayu rivers. In the south, where it borders on the Akyab township, it is a network of tidal creeks; in the north it is hilly. The population increased from 44,700 in 1891 to 49,555 in 1901. It contains 290 villages, and the head-quarters are at Ponnagyun (population, 565), among the southern creeks. The area cultivated in 1903–4 was 106 square miles, paying Rs. 1,62,000 land revenue.

Minbya Subdivision.—Subdivision of Akyab District, Lower Burma, consisting of the PAUKTAW and MINBYA townships.

Pauktaw.—Township of Akyab District, Lower Burma, lying between 19° 47′ and 20° 24′ N. and 92° 56′ and 93° 15′ E., on the eastern bank of the Kaladan river, with an area of 496 square miles, the greater part of which is flat country intersected by tidal creeks. The population was 40,875 in 1891 and 43,395 in 1901. There are 190 villages but no town. The head-quarters are at Pauktaw (population, 755) on a tidal creek to the east of Akyab town. The area cultivated in 1903–4 was 127 square miles, paying Rs. 1,88,000 land revenue.

Minbya Township.—Eastern township of Akyab District, Lower Burma, lying between 20° 2′ and 20° 35′ N. and 93° 7′ and 93° 43′ E., on the western edge of the Arakan Yoma, with

an area of 480 square miles. The population was 35,505 in 1891 and 41,663 in 1901, consisting largely of Chins. There are 295 villages. The head-quarters are at Minbya (population, 1,322), on a branch of the Lemro river. The area cultivated in 1903–4 was 104 square miles, paying Rs. 1,33,000 land revenue.

Kyauktaw Subdivision.—Subdivision of Akyab District, Lower Burma, consisting of the KYAUKTAW and MYOHAUNG townships.

Kyauktaw Township.—Northern township of Akyab District, Lower Burma, lying between 20° 35′ and 21° 13′ N. and 92° 50′ and 93° 16′ E., and bordering on the District of Northern Arakan, with an area of 370 square miles. The population was 45,186 in 1891 and 53,303 in 1901. There are 312 villages. The township is for the most part level, and is traversed from north to south by the Kaladan river, on the banks of which Kyauktaw, the head-quarters (population, 2,303), stands. The area cultivated in 1903–4 was 116 square miles, paying Rs. 1,40,000 land revenue.

Myohaung Township.—Easternmost township of Akyab District, Lower Burma, lying between 20° 20′ and 20° 50′ N. and 93° 2′ and 93° 58′ E., partly in the valleys of the Kaladan and Lemro, partly on the slopes of the Arakan Yoma, with an area of 1,329 square miles. The population was 43,366 in 1891 and 49,978 in 1901. There are 282 villages. In consequence of the scarcity of population in the hill areas on the western slope of the Arakan Yoma, the density (37 persons per square mile) is lower than that of any other township in the District. The head-quarters are at MYOHAUNG or 'old town' (population, 2,833), for centuries the capital of the ancient kingdom of Arakan. The area cultivated in 1903–4 was 152 square miles, paying Rs. 2,00,000 land revenue.

Buthidaung Subdivision.—Subdivision of Akyab District, Lower Burma, consisting of the BUTHIDAUNG and MAUNGDAW townships. The head-quarters are at Buthidaung (population, 983), on the Mayu river.

Buthidaung Township.—Township in Akyab District, Lower Burma, constituted in 1906 from a portion of the RATHEDAUNG township, with an area of 763 square miles and a population (1901) of 59,766.

Maungdaw.—Westernmost township of Akyab District, Lower Burma, lying between 20° 18′ and 21° 27′ N. and 92° 11′ and 92° 43′ E., with an area of 426 square miles. It is a strip of coast land on the shore of the Bay of Bengal,

abutting on the southern end of the Chittagong District of Bengal. The population was 65,407 in 1891 and 83,247 in 1901, giving a density of 195 persons per square mile. There are 377 villages. It is a favourite resort for immigrants from Chittagong, and about three-quarters of its inhabitants profess the Musalmān faith. This foreign element has caused the population of the township to increase between 1891 and 1901 by 27 per cent. The head-quarters are at Maungdaw (population, 1,735), on the eastern shore of the Naaf estuary, which separates Burma from Bengal. Away from the coast the land is hilly. The area cultivated in 1903-4 was 128 square miles, paying Rs. 1,80,000 land revenue.

Akyab Town.—Head-quarters of the Arakan Division and of Akyab District, Lower Burma, situated in 20° 8′ N. and 92° 55′ E., at the mouth of the Kaladan river. Akyab ranks fourth among the towns of the Province. The population was 19,230 in 1872, 33,989 in 1881, 37,938 in 1891, and 35,680 in 1901. The decrease in the last decade is attributed to an unwonted paucity of coolies from outside at the time of the Census. The population is mixed, comprising Arakanese (11,531), Burmans, Chinese, and natives of India, notably Bengalis from the Chittagong coast (18,328).

The origin of the name Akyab is unknown. Some authorities allege that it is a corruption of Akyat, the name of a pagoda which is supposed to be the shrine of the jawbone of Buddha, and was built by one of the ancient Arakanese kings. The Arakanese name of the town is *Sit-twe* (literally, 'where the war began'). There are no legends connected with the origin of this name. Until the British occupation Akyab was merely a small fishing village, the capital of Arakan being MYOHAUNG. After the annexation of Arakan, in 1826, Akyab was made the capital of the new province, and has since ranked as its chief port. The town is situated on well-wooded low-lying ground between the sea face and the Kaladan, which, flowing down from the north, opens out as it reaches the sea into an ample roadstead, partially protected from the monsoons by the Boronga and Savage Islands. The latter of these lies at the seaward end of the port and is surmounted by a lighthouse. The harbour has an outer and inner bar. At high water vessels of any draught can safely enter or leave, but at low water a pilot is needed. The harbour is provided with an iron wharf, a small stone pier, and several smaller wooden jetties. The town is really an island, triangular in shape and about 5 square miles in extent, cut off from the mainland by

a creek which connects the Kaladan river on the east with the estuary of the Mayu river on the west, and open on the south and south-west to the sea. Two sides of the triangle run in a southerly direction to where the river meets the sea, and the apex is known locally as The Point. The houses of the European residents are built in the southern portion of this wedge, along the eastern shore of the harbour as far as the stone pier. The native town fills the north of the triangle between the pier and the Cherogea creek, which forms the northern boundary of the town proper, and along both banks of which the rice-mills are situated. The town is unhealthy, being subject to regular epidemics of cholera as well as to malarial fever, which formerly earned for Akyab the not altogether unmerited sobriquet of 'the white man's grave.'

The principal public buildings are the jail, the hospital, the municipal high school, and the Government offices. There are Anglican and Roman Catholic churches, and the latter has a convent and a school attached to it. Most of the dwelling-houses are built of wood or mat, with thatched roofs. A clock-tower commemorates the first, and a race-stand the second, Jubilee of Queen Victoria. The jail is a second-class District jail, with accommodation for 489 prisoners. It was the scene of a serious outbreak in 1892, during the course of which the European jailor in charge was murdered by the convicts.

There are eleven steam-power mills in the town, of which five mill white rice, and the remainder what is known as 'cargo rice.' From May to December most of the mills close, opening again in January. Recently short crops and high prices have led to much of the grain being exported in the husk. The rice trade is carried on extensively by natives of India. Besides the rice-mills there are no factories in the town deserving of note, except a saw-mill and a tannery, both of which are owned and worked by Chinamen, and another tannery worked by natives of India. There are two banks in the town, several printing presses and local newspapers. All or nearly all of the unskilled labourers are imported from Chittagong. They usually return to their homes at the close of the busy season in April or May. Nearly all the skilled workmen are Indians. There are, however, a few Arakanese artisans, chiefly gold and silver workers. The Indian appears to be gradually ousting the indigenous handicraftsman here as elsewhere.

The foreign trade of Akyab port was valued at 76 lakhs in 1903–4, and the trade with Indian ports at 157 lakhs.

The exports consist almost exclusively of rice, 'cargo-rice' being sent ordinarily to the Mediterranean and white rice to Indian ports. The former was valued in that year at 74 lakhs, all but about 9 lakhs' worth being shipped to Europe. The rice exports to Madras coast ports were valued at 34 lakhs, and those to Bombay at 15 lakhs. The total of imports in 1903–4 was made up for the most part of 37 lakhs of treasure from Calcutta, 31 lakhs' worth of commodities from the same port, and 17 lakhs' worth from Burmese ports, comprising gunnies, dried fish, cotton, betel-nuts, &c. From foreign ports the imports are insignificant.

Akyab was constituted a municipality in 1874. The municipal committee consists of a president, vice-president, and fifteen members. The Deputy-Commissioner is president and the Civil Surgeon vice-president. The elective system is in force, but the interest taken in local self-government is not keen. A scheme is under consideration for supplying the town with water from a reservoir to be constructed 2 miles outside municipal limits. The municipal revenue and expenditure for the ten years ending 1900 averaged a lakh. In 1903–4 the income and expenditure came to 1·3 lakhs. The principal receipts were Rs. 26,000 from houses and lands, Rs. 28,000 from conservancy fees, and Rs. 38,000 from tolls or markets and slaughter-houses, while the chief items of expenditure were administration (Rs. 15,000), conservancy (Rs. 31,000), and roads (Rs. 20,000). The Port fund provides lights and buoys, and maintains the wharves. Its income, derived from shipping dues for the most part, was Rs. 99,000 in 1903–4.

The municipality maintains a high school, which has upwards of 370 pupils. The total expenditure on education is about Rs. 24,000. A portion of this is met from school fees and a portion from contributions by Provincial and District cess funds, while about one-quarter is an actual charge on municipal revenues.

There is a large general hospital with 114 beds. This, and the Shwebya dispensary (in which during the same year 6,543 persons were treated), are almost entirely supported by the municipality, which contributed Rs. 14,500 in 1903 towards their up-keep, the balance being met out of subscriptions (Rs. 2,500). Attached to the general hospital is a European Seamen's Hospital, built in 1902, chiefly from funds derived from the accumulation of Sunday labour fees levied at the port.

Myohaung Village ('old town').—Head-quarters of the

township of the same name in Akyab District, Lower Burma, situated in 20° 35′ N. and 93° 12′ E., on a branch of the Kaladan, about 40 miles from Akyab and the Bay of Bengal. This village was formerly the capital of the ancient kingdom of ARAKAN. The seat of government is said to have been moved here from Dwārawadi, farther south in Sandoway District, about the close of the tenth century, in consequence of aggressions across the Arakan Yoma from the kingdom of Prome; and Myohaung remained the capital till Arakan was finally absorbed into the kingdom of Ava in the eighteenth century. In the first Burmese War Myohaung was one of the earliest points of attack. It was besieged by a British division which had come by land from Bengal, and was captured after a stubborn resistance at the end of March, 1825. On Arakan passing under British rule at the close of the war, the official head-quarters were not located in the ancient capital, but in the more accessible Akyab, at the mouth of the Kaladan, and Myohaung is now little more than a village. In 1901 its population amounted to 2,833.

The ruins of the ancient fort are still in existence; they consist of three square enclosures, one within the other, surrounded by masonry walls of very considerable thickness, built of stone and brick set in cement. The openings in the hills surrounding the town also contain remains of defences. In the town itself the site of the old palace is still traceable.

Boundaries, physical aspects, and hill and river systems.

Arakan, Northern, District (or Arakan Hill Tracts).—An inland stretch of mountainous country which forms the northernmost District of the Arakan Division of Lower Burma. It is situated between the Chittagong Hill Tracts of Eastern Bengal and the Chin Hills, and forms part of the same hill system as these two areas and as the Lushai Hills of Assam, of which it is, in point of fact, the most southerly portion. It lies between 20° 44′ and 22° 30′ N. and 92° 35′ and 93° 45′ E., with a total area, excluding unadministered tracts, of 1,500 square miles.

The District is bounded on the north by the Lushai Hills, and on the east by the Chin Hills proper and the Pakokku Chin Hills. The upper half of its western border marches with the Chittagong Hill Tracts, the lower half being bounded by Akyab District, which also borders it on the south. The area thus defined includes a stretch of hill country over which no direct control is at present exercised. The District consists from end to end of parallel ridges of sandstone, covered with dense tree and bamboo jungle, and is drained by mountain

torrents, which form the feeders of its two main streams, the Lemro and the KALADAN. The general trend of the ridges, north and south, is parallel to the coast-line, which at its nearest lies about 50 miles to the west. The valleys are for the most part narrow and confined, and wherever the rivers that they conduct to the sea have been deflected sharply from their southerly course, the gaps in the mountain chains are clearly traceable. The height of the more important ranges averages from 3,000 to 3,500 feet, the Kyaukpandaung range, the most prominent, being 4,500 feet above the sea. The scenery is wild and beautiful, but has been characterized as monotonous, an epithet which aptly describes landscapes in which bamboo jungle plays an important part.

The Kaladan river enters the Northern Arakan District from the Lushai Hills at its most northerly point. It traverses the western portion, passes Paletwa, the District head-quarters, perched on its left bank in a narrow valley, and not far below this point crosses into Akyab. From Paletwa southwards it is navigable by steam-launches of light draught. Its principal tributary, the Pi, runs down the western edge of the District parallel to the main river, which it joins a little south of the border. The Lemro rises in the borderland between Northern Arakan and the Chin country. Its course is to the east of, but more or less parallel to, that of the Kaladan, and it crosses the Akyab border well to the south-east of its sister stream. For navigation purposes it is impracticable, and it has no striking scenery until the heart of the hills is reached. Its main feeders are the Pen, the Sen, the Wak, and the Ru.

The geology of the District has as yet received very little attention; but the rocks composing the hill ranges, which form its chief feature, are in all probability Tertiary, with some perhaps of Cretaceous age. Specimens of lignite have been obtained, but no good evidence as to the existence of coal has been produced. **Geology.**

Little is known of the botany, but as these hills are a continuation of the south Lushai system we may regard the flora as identical with that of those hills. The forests are constituted by such trees as *Dipterocarpus turbinatus*, *Saurauja punduana*, *Schima Wallichii*, *Duabanga sonneratioides*, and several species of figs; while palms such as *Pinanga*, *Caryota*, *Licuala*, and *Calamus* are doubtless frequent. **Botany.**

The wild animals found include the elephant, the rhinoceros, the bison, the tiger, the leopard, the bear, and the hog. Deer and monkeys are common. Peafowl, plentiful elsewhere in **Fauna.**

Burma, are not found; and geese, duck, teal, and snipe are also conspicuous by their absence.

Climate, temperature, and rainfall.

The climate is notoriously unhealthy, especially in the valleys and along the river banks, owing to malaria consequent on the vast extent of uncleared jungle. March, April, May, and June are especially deadly months. During the cold season the weather is very pleasant, and distinctly chilly at night and in the early morning. The temperature varies from 58° to 103°, extremes which are attained in January and May respectively. The annual rainfall averages from 120 to 130 inches. Cyclones occur at intervals, and slight earthquake shocks have occasionally been felt, but serious floods are not known.

History.

The Hill Tracts formed for many years a portion of Akyab District. Inhabited by wild tribes continually at feud with each other, and committing raids, not only in the hills, but occasionally in the lower and more civilized country to the south, it was found impossible for the local officers to do more than make occasional expeditions for the punishment of marauders. In 1865, in order to bring the country more under control, the Hill Tracts were separated from Akyab and made the separate charge of a Superintendent who was police officer. In 1868, in order to encourage trade and traffic with the hill tribes, and gradually to win them over to a more peaceful attitude towards the people of the plains, a market was established at Myauktaung, about 68 miles north of Akyab, and the Superintendent made his head-quarters at this place. This market proved a great success, and the hill people soon learnt to do a large trade in sesamum, cotton, tobacco, and other hill produce with dealers from Akyab. In 1876, new arrangements being found necessary, the Superintendent's head-quarters were moved from Myauktaung, at the foot of the hills, to Paletwa, about 40 miles farther north, where they still remain.

The people.

The population of the area under administration was 8,790 in 1872; 14,499 in 1881; 14,628 in 1891; and 20,682 in 1901. The figures for the enumerations prior to 1901 are, however, of questionable value. There are no towns, and the number of villages according to the Census of 1901 was only 27. In reality the total is about 330, but villages were combined for census purposes. The population of Paletwa, the District head-quarters, is only 481. The density of population (rather less than 14 persons per square mile) is lower than that of any other District in Lower Burma except Mergui. The people

have apparently increased very rapidly between 1891 and 1901, but the earlier enumeration was admittedly defective. The religion of the majority of the inhabitants is Animism or spirit-worship, and the number of Buddhists is comparatively small. There are no Christian missions, and the number of Christians is insignificant.

Race and occupation. The principal races are the Kamis, the Mros, the Chaungthas, and the Chins. The Kamis (13,300) form more than half the population. They are a hill tribe speaking a dialect allied to Chin, and are doubtless themselves of Chin stock. The Mros (2,500) are also a hill tribe, and, like the Kamis, in a low state of civilization. They speak a language in some ways more closely allied to Burmese than to Chin, but are probably connected with the Kamis ethnically. The Chaungthas (1,100), who are found only in the valleys of the District, differ but little from the Arakanese, and are probably a hybrid ethnical product, formed from the admixture of Chin and Arakanese elements in the population. The Chins of Northern Arakan (1,800) inhabit the country lying round the upper reaches of the Lemro, and are known locally as Lemro Chins. They differ but little from the Chins of the Pakokku Hill Tracts in the east, and of the Arakan Yoma farther south. The population supported by agriculture in 1901 numbered 19,900, as compared with 13,900 in 1891.

Agriculture. The method of cultivation throughout the District is that known as *taungya*. A suitable spot on the side of a hill is selected and cleared of jungle, which is set fire to in the month of April, and the seed is sown immediately afterwards. The only agricultural implement used is a chopper.

Principal crops. Rice and tobacco are the two main crops. Rice, cotton, and sesamum are planted and grow up together. The crop matures during the rainy season, and is reaped in August. *Taungya* rice is poor, and this kind of cultivation is ordinarily resorted to only where there is not enough level land available. The rainfall is good throughout the District and cultivation is on the increase.

The total area cropped in 1903-4 was 17 square miles, of which 14 were under rice. Tobacco covered 1,300 acres, stretching along the banks of the rivers and creeks. The only other crops are cotton (300 acres) and sesamum. Artificial irrigation is unknown.

Cattle, &c. Cattle, sheep, and goats are bred; also hill cattle (*Bos frontalis*). There are no public grazing-grounds. During April and May difficulty is experienced in feeding cattle, as

the grass dries up, and the animals have to browse on leaves and weeds in the jungle. The live-stock never suffer seriously, however, for want of fodder.

Forests.

There are no 'reserved' forests. The hills are clothed with thick tree and bamboo jungle, the principal forest trees being *kabaung* (*Strychnos Nux-vomica*), *pyingado* (*Xylia dolabriformis*), *thitkado* (*Cedrela Toona*), and *thitka* (*Pentace burmannica*). A few teak plantations, started in 1872, are in a flourishing condition. The principal minor forest products are cane and bamboo. The area of unclassed forest is approximately 1,500 square miles. The following timber trees are 'reserved': *kabaung*, *pyingado*, *thitka*, *thitkado*, and *kanyinbyu* (*Dipterocarpus alatus*). On these a seignorage is levied at Rs. 3 per ton. Royalty is also levied at lower rates on a number of 'unreserved' trees. The forest receipts in 1903–4 amounted to Rs. 4,350. Licences to cut 'reserved' trees are issued by the Deputy-Commissioner, and seignorage on 'unreserved' trees is collected by forest officials at stations on the main streams.

Arts and manufactures.

The only industries practised are weaving, basket-making, and pottery. Cotton is the material used for weaving; and rough cloths and blankets, varying in pattern with the nationality of the weaver, are turned out of the local hand-looms in considerable numbers. Long earthenware pots covered with a cane network are manufactured by the Chins in the north of the District.

Trade and communications.

The whole external trade is with Akyab, the principal exports being tobacco, cotton, and sesamum, and the imports rice, piece-goods, salt, and cattle. The trade is carried on by native boats and the steamers of the Arakan Flotilla Company. The total value of the exports by country boats is about half a lakh, while that of the imports is more than 2½ lakhs. A light-draught steamer belonging to the Arakan Flotilla Company, Akyab, runs twice a week between Akyab and Paletwa, and does a small carrying trade. There are no made roads in the interior, and communication is carried on by river in small canoes and by jungle pathways, for about 280 miles of which Government makes itself responsible. The expenditure on these tracks, of which the most important is that from Paletwa to Kyaukpandaung, was approximately Rs. 300 in 1903–4. Towards this total Provincial funds contributed two-thirds, the other third being provided by the District cess fund.

Administration.

There are no subdivisions or townships, and no subordinate magistrates. The whole of the executive work is carried out by the Superintendent, with the aid of a judicial and revenue

establishment, and eighteen paid hill chiefs, who are graded as police constables and sergeants, and receive pay according to their rank. These chiefs collect revenue, and receive the same commission as *ywathugyis* (headmen) elsewhere. There are nine *thugyis*, who are not paid and who receive no revenue commission, as only paid chiefs collect the revenue. The village staff includes 300 *se-ein-gaungs*, or 'headmen of ten houses,' who are practically petty village headmen, as hill villages are generally composed of ten to fifteen houses.

Civil justice and crime. The only court is that of the Deputy-Commissioner (or Superintendent), but serious offenders are committed to the Arakan Sessions court, as in other Districts. Crime is very light as a rule. On an average about forty petty criminal cases are instituted during the year. Dacoity and violent crimes are almost unknown, and it is only very occasionally that a murder is committed. The most common forms of civil cases are suits for recovery of moneys lent and dowry cases. Civil cases, when practicable, are referred to paid chiefs for arbitration, if both parties are willing; if not, the case is taken up by the Deputy-Commissioner, who exercises original and appellate jurisdiction under the Arakan Hills Civil Justice Regulations (VIII of 1874 and V of 1876).

Revenue administration. There are only two heads of revenue: tribute, at the rate of R. 1 per family; and *taungya* tax, a species of land revenue, at R. 1 per family working *taungya* crops other than tobacco, and R. 1 per plot for tobacco. The revenue of the District, which has not been settled, is levied under the authority of the Arakan Hills District Laws Regulation (IX of 1874). The total revenue in 1890-1 was Rs. 7,000. In 1903-4 there were 10,800 acres under cultivation, paying Rs. 7,000 in revenue, the total revenue in that year being Rs. 12,000, tribute bringing in Rs. 4,800. Nothing is at present obtained in the shape of excise revenue, as no duty is levied on the manufacture of *kaung* or rice-beer, which is brewed and consumed in considerable quantities by the hill tribes.

Local funds. There is a District cess fund which had an income of Rs. 876 in 1903-4, but no municipalities have been constituted.

Police and jails. There are six police posts and two outposts in the District. Two of the police posts are on the northern frontier, three on the eastern frontier, and one at Paletwa. One outpost is at Kaladan, and one at Pichaung on the border of Akyab District. The Superintendent is the head of the civil police, and controls a force of one Assistant, 2 inspectors, 8 sergeants, and 57 civil constables. Weekly and fortnightly police patrols, by

boat and land between the various police posts, keep communications open and carry dispatches. The military police force consists of 3 native officers and 197 non-commissioned officers and sepoys. Fifty-seven of these military police are at head-quarters; the remainder are distributed at frontier posts, with a small proportion of civil police attached to each post. The Arakan Hill Tracts military police forms a separate battalion, and is composed of Gurkhas. The Superintendent is *ex officio* adjutant of the battalion. There is no jail in the District. Prisoners are sent to Akyab for sentences exceeding one month, and others are kept in the lock-up at Paletwa.

Education. After Salween and the Chin Hills, Northern Arakan shows the lowest figures for literacy of any District in the Province. The proportion of the population able to read and write in 1901 was only 31 in every 1,000. Two primary schools contain forty-five pupils, and the educational expenditure is only Rs. 70, derived from the District cess fund.

Hospital. Paletwa has a civil hospital, with accommodation for 28 male and 8 female patients. The number of patients treated in 1903 was 2,620, the number of operations was 47, and the expenditure (derived almost wholly from Provincial funds) amounted to Rs. 4,100. Fevers and skin disease are prevalent; leprosy is common on the Pi and Mi streams; and the percentage of insane persons is higher than anywhere else in Burma except the Chin Hills. Statistics show that the conditions of life in the Hill Tracts are far from favourable.

Vaccination. Vaccination is optional, but is readily resorted to. One vaccinator is attached to the District, and it has been calculated that out of 1,000 persons about 46 are protected. This estimate is probably low, for the average number of persons successfully vaccinated during the past five years was returned at 1,123.

[Major Gwynne Hughes, *Hill Tracts of Arakan* (1881).]

Paletwa.—Head-quarters of the Northern Arakan District, Lower Burma, situated in 21° 18′ N. and 92° 51′ E., on the west bank of the Kaladan river. Paletwa is an insignificant village with a population (1901) of 481, perched on a high bank well above the stream, in a narrow gorge. The civil station consists of an office for the Deputy-Commissioner, a police station, hospital, lines for the military police, and a few residences for the officers stationed at head-quarters. It is traversed by metalled pathways connecting the various eminences on the hill-side on which the houses and offices are built. There is a small wharf on the river bank below the village, alongside of

which the Arakan Flotilla Company's steam-launches moor. On the bank are several fine groves of teak, the remains of an early plantation.

Kyaukpyu District.—A seaboard District in the centre of the Arakan Division, Lower Burma, lying between 18° 40′ and 20° 40′ N. and 93° 13′ and 94° 26′ E., with an area of 4,387 square miles. It is bounded on the north by Akyab District; on the east by the Arakan Yoma, which cuts it off from Thayetmyo and Minbu Districts; on the south by Sandoway District; and on the west by the Bay of Bengal. It includes a strip of mainland extending along the western slopes and foot-hills of the Arakan Yoma as far south as the Ma-i river and the large islands of RAMREE and CHEDUBA, with a small archipelago of lesser islets stretching to the north and south along the coast, separated from the mainland by a number of tidal creeks, and surrounding two indentations known as Hunter's Bay and Combermere Bay. Kyaukpyu harbour is the name given to a large area of water extending for 30 miles between Ramree Island and the mainland, with an average width of 3 miles. At its mouth are several dangerous rocks rising abruptly out of the sea, which render ingress at night dangerous. The principal mountain range is the Arakan Yoma, which sends out spurs almost up to the sea-coast, and is crossed at two points, known as the An and Dalet passes. A chain of low hills traverses Ramree Island from north-west to south-east. There are no rivers of any importance in the District; the An and Dalet streams, which drain the mainland, are navigable by large boats for distances of 45 and 25 miles respectively from their mouths. Above these points they are mere mountain torrents. Boundaries, configuration, and hill and river systems.

The rocks composing the surface are partly Cretaceous and partly Eocene. The sandstones and shales of Ramree may be Cretaceous, but no marked characteristics are apparent by which the rocks of the island can be divided into two series. On the island of Cheduba are several mud volcanoes, small conical hillocks of blackish-grey mud, discharging marsh gas and occasionally flames of great brilliancy. Except in the case of one of these in Cheduba Island, there have been no explosions of the latter kind for ten years. This volcano broke out once in 1903 and has been active in 1904, the eruptions being caused by petroleum gases. On these occasions large masses of dense smoke issue, flames shoot up, it is said, to a height of 1,000 feet, and mud is ejected with great force. It is stated that the last eruption was visible from the deck of a coasting steamer 50 miles away. Geology.

Botany. The coast is characterized by the mangrove and tidal forests common to all the maritime Districts of the Province, which are described in the botany paragraph of HANTHAWADDY DISTRICT. Nothing is known of plant-life in the inland portion.

Fauna. The forests abound with tigers, bears, deer, and wild hog. Wild elephants roam on the Arakan Yoma in the An township.

Climate and temperature. The climate is notoriously unhealthy, malarial fevers and bowel-diseases prevailing, the former at the beginning, the latter at the end of the rains. It is unfortunate that Kyaukpyu town itself, which seventy years ago was said to enjoy comparative salubrity, is situated in what later years have shown to be a specially pestilential area; and it is possible that, if the head-quarters were moved, the District would lose much of its evil reputation. The temperature varies but little throughout the year, averaging 84° in 1900, during which year the maximum temperature, registered in June, was 97°, and the minimum, in January, was 74°.

Rainfall. The rains last from May to October, being heaviest in July, August, and September. The annual rainfall for the whole area during the three years 1902–4 averaged 182 inches. It was greatest at Ramree (203 inches) and least at An (161 inches).

History. The District was part of the once powerful kingdom of Arakan, and its history is included in the sketch given in the article on the ARAKAN DIVISION. After the conquest of Arakan by the Burmans at the close of the eighteenth century, the mainland portion of the District belonged to Arakan proper, while Ramree and Cheduba Islands formed separate governorships. On the cession of Arakan to the British the two islands were formed into one District, called Ramree District, and the mainland into the An District; but these two charges were amalgamated nearly thirty years afterwards, and made into the Kyaukpyu District. The garrison of Arakan, transferred to Kyaukpyu from Sandoway shortly after the annexation, was withdrawn altogether in 1855.

The people. The population at the last four enumerations was: (1872) 144,177, (1881) 149,303, (1891) 163,832, and (1901) 168,827. The chief statistics for 1901 are shown in the table on the opposite page.

Along the coast the population is fairly dense, but in the hilly Myebon and An tracts, which border on the Arakan Yoma, the people are more scattered. Burmese is spoken by 42,222, and Arakanese by 109,596. The Chins of the District retain their dialect, practically none speaking Burmese, as many of them do on the other side of the Yoma.

The Arakanese number 128,300 (more than three-fourths of the total population), distributed mainly in the island townships of Kyaukpyu, Cheduba, and Ramree. The Burmans, who are found chiefly in the An and Myebon townships, number 22,600. The Chins come next with 13,300; for the most part they are inhabitants of the hilly An and Myebon townships. There is a fluctuating population of immigrants from Chittagong, who come over for the harvest and sometimes settle and prosper. Musalmāns have lived in the District for centuries, most of them being descendants of natives of Bengal captured in the numerous wars. They numbered 3,700 in 1901, while Hindus were only 420. The population dependent upon agriculture in 1901 was 124,200, or 73 per cent. of the total. Of this number about 15,260 were dependent on *taungya* cultivation alone. The number of Christians in 1901 was 121, of whom 79 were natives. No missions have been established. Race and occupation.

Township.	Area in square miles.	Number of		Population.	Population per square mile.	Percentage of variation in population between 1891 and 1901.	Number of persons able to read and write.
		Towns.	Villages.				
Kyaukpyu .	416	1	272	42,424	102	+ 1	6,328
Myebon .	441	...	146	24,109	54	+ 15	5,207
An . .	2,861	...	353	29,337	10	+ 5	4,691
Ramree . .	449	...	247	46,058	102	− 3	8,968
Cheduba . .	220	...	114	26,899	122	+ 6	4,734
District total	4,387	1	1,132	168,827	38	+ 3	29,928

There is no irrigation, and the rice depends entirely on the rainfall, which is, however, regular and plentiful. The soil, except near the rivers, is not very good, and in the townships of Kyaukpyu and Ramree is sandy. *Taungya* or shifting cultivation prevails in the hills. In 1881 there were 166 square miles cultivated; in 1891, 189; in 1901, 242 square miles. General agricultural conditions.

The main agricultural statistics for 1903-4 are given below, in square miles:— Chief agricultural statistics and principal crops.

Township.	Total area.	Cultivated.
Kyaukpyu . . .	416	54
Myebon	441	58
An	2,861	39
Ramree	449	55
Cheduba	220	40
Total	4,387	246

In 1903-4 rice occupied 227 square miles, of which about 1,000 acres were *mayin* or hot-season rice. The cultivation of sugar-cane, formerly large, has decreased considerably of late, and is now only 450 acres. Tobacco is grown in the townships of Kyaukpyu, Cheduba, and Ramree, covering 2,800 acres. Garden cultivation extends over 3,800 acres, including 400 acres under mangoes. The *dani* palm (*Nipa fruticans*), the leaves of which are used for roofing houses, and which produces a kind of sugar and toddy, is grown on nearly 3,000 acres.

Cattle, &c. Cattle are more numerous than in the neighbouring District of Sandoway. They are imported from Upper Burma through the An Pass. Buffaloes are largely used for cultivation, and thrive better than cattle, owing to the character of the soil. Goats are kept in a few villages by natives of India, but are nowhere bred on a large scale.

Forests. *Pyingado* (*Xylia dolabriformis*) is the most valuable timber tree. From the An southwards it forms compact masses of forest all along the lower hills and the adjoining plains; north of the An to the Dalet it occurs in patches, but north of the Dalet it ceases altogether. *Pyingado* is also met with on the hills of Ramree Island. The An drainage is covered with bamboo forests, each only a few acres in extent, containing *pyingado*. *Kanyinbyu* (*Dipterocarpus alatus*), used for houses and boats and for extraction of wood-oil, is common throughout the District. In Ramree Island *thitya* (*Shorea obtusa*), *pyinma* (*Lagerstroemia Flos Reginae*), and *shawtu* (*Beilschmiedia sp.*) are in request for building purposes. A species of *kokko* (*Albizzia Lebbek*) and *pyinma* are much used for boat-building, for which *kanyinbyu* also is valuable. The Forest department used not to be represented in the District, but proposals for introducing regular administration have lately been sanctioned.

Minerals. The minerals worked are limestone, clay for pottery and bricks, and petroleum. Two companies are at work with American machinery extracting oil at Yenandaung in the Kyaukpyu township. In places the natives also work on modern lines, though here and there the primitive system of drawing the oil up in earthenware pots from holes about 4 feet in diameter is still seen in operation. Petroleum is sold at 4 annas per maund at the well mouth. Rather more than 100,000 gallons is produced annually. Limestone is extracted from the hills in the Ramree and Cheduba townships. Iron in Ramree Island and coal in Ramree and Cheduba Islands have been discovered, but are not worked.

The manufacture of salt by evaporation of sea-water is carried on in the Kyaukpyu and Ramree townships. The sea-water is passed through five pans, remaining for some days in each, so as to evaporate, and is then run into a salt-tank. Finally it is poured into earthen vessels and boiled. The output of the District in 1903 was about 41,000 cwt., of which almost half was exported. Mat-weaving and pottery of the roughest kind are the only other manufactures. Very few potters possess a wheel; as a rule they use only a flat stick for modelling. The clay used is procured locally from the neighbouring hill-sides. Unlike the Burman, the Arakanese is a poor carpenter, and for bridge-building labour has to be obtained from India or other parts of Burma. The census returns show that there are many boat-builders in the District. Arts and manufactures.

There are very few traders, though a few shops kept by natives of India are to be found in Kyaukpyu and Ramree. Kyaukpyu is a port of some local importance. The exports are rice, salt, timber, fish-maws, hides, and horns, sent for the most part to Akyab. The imports are mainly hardware, food-stuffs, cloth, *longyis* (waistcloths), cotton, and silk. Statistics of the trade of KYAUKPYU will be found in the article on that town. Commerce and trade.

Trade is chiefly in the hands of the British India Steam Navigation Company, whose steamers call weekly at Kyaukpyu in both directions, giving communication with Akyab, Sandoway, and Rangoon. Subsidized launches maintain weekly services to the head-quarters of the townships, and launches run also to Akyab and Sandoway. Kyaukpyu had no direct telegraphic connexion with the rest of Burma until 1906. Messages used to be sent by special messenger to a station about 50 miles from head-quarters. There are no metalled roads of any length in the District, the usual method of communication being by boat, but even boat travelling is impracticable during the monsoon. Tracks lead into Upper Burma over the main passes. The Dalet pass is difficult and but little used, but the road over the An pass is a trade route of some local importance. A lighthouse will probably be erected on Beacon Island off Cheduba. Communications and public works.

The District contains five townships: the AN township in the north-east, the MYEBON township in the north-west, and the island townships of RAMREE, KYAUKPYU, and CHEDUBA. In 1904 Myebon, An, and Kyaukpyu were grouped together in the Kyaukpyu subdivision. The townships are in charge of the usual executive officers. The head-quarters treasury is super- District subdivisions and staff.

vised by the assistant magistrate, and there is an *akunwun* in charge of the revenue. The District forms a subdivision of the Arakan Public Works division, conterminous with the civil Division. The land records staff consists of a Superintendent, 3 inspectors, and 31 surveyors, and there are 540 village headmen for the maintenance of order in the interior.

Civil justice and crime.

The Deputy-Commissioner of Kyaukpyu is also District Judge. With the exception of the Kyaukpyu township court, all the township courts are presided over by the respective township officers. The Kyaukpyu township judge, who is also treasury officer and head-quarters magistrate, has Small Cause jurisdiction up to Rs. 50 within the Kyaukpyu municipal limits. The criminal courts are presided over by the executive officials; at Kyaukpyu town there are four magistrates, in addition to the Deputy-Commissioner. The work of the criminal courts is not heavy, though thefts and assaults with dangerous weapons are common. There are benches of honorary magistrates at Kyaukpyu and Ramree.

Revenue administration.

Under native rule the taxes levied were the same as in other Districts: namely, imposts on houses, trades, forest produce, and the like. The earliest step towards a regular assessment appears to have been made in 1828, when a rough scale of rates was drawn up by the Superintendent and approved by the Bengal Government. An attempt was made in these early days to collect land revenue on the Indian *zamīndāri* principle, but the experiment seems to have been doomed to failure from the outset. A portion of the District, comprising an area of about 680 square miles, was settled in 1898–9, when the rates on rice land varied from 10 annas to Rs. 2–8 per acre, while garden lands were assessed at rates varying from Rs. 2 to Rs. 4 per acre. In 1905 a summary settlement dealing with a further area of about 600 square miles was effected. In this area rice land is assessed at rates varying from Rs. 1–4 to Rs. 2–1–2 per acre. Garden land, plantains, and *dani* pay Rs. 2 per acre, while miscellaneous cultivation (including betel-vine) is assessed at Rs. 2–8 per acre, and each solitary fruit tree at 2 annas. The following table shows how the revenue has increased since 1880–1, the figures representing thousands of rupees:—

	1880–1.	1890–1.	1900–1.	1903–4.
Land revenue . .	1,49	1,62	2,20	2,37
Total revenue . .	5,06	4,42	5,39	5,67

The total revenue in 1903–4 includes capitation tax (Rs. 1,70,000) and excise (Rs. 1,40,000).

Local funds. The District cess fund, chiefly derived from a 10 per cent. levy on the land revenue, is administered by the Deputy-Commissioner for the maintenance of communications, &c. The income in 1903–4 was Rs. 35,000. KYAUKPYU is now the only municipality, though Ramree was a municipality up to 1899.

Police and jails. Under the District Superintendent of police are 2 inspectors, 4 head constables, and 236 rank and file, distributed in 10 police stations and 4 outposts. The military police belong to the Rangoon battalion, and are kept at head-quarters and changed every six months, a measure rendered necessary by the unhealthiness of the District; they number 60, commanded by a *jemadār*. At the District head-quarters is a jail with accommodation for 146 male and 14 female prisoners, who are chiefly employed in mat-making and coir-pounding.

Education. Little interest is taken in education; and the *pongyis*, who are few in number and are said to lack enthusiasm, do but little to further the efforts of the deputy-inspector of schools, who is in educational charge of the District. There is an Anglo-vernacular school at Kyaukpyu, and a few lay schools have been opened in the township head-quarters, but no schools are maintained for the Chins of the neighbouring hills.

With education stagnant, it is not surprising that the standard of literacy is low. The percentage of literate males is 34 and of literate females 3, compared with 38 and 4·5 for the Province as a whole. For both sexes together the proportion is 18 per cent. The number of pupils rose from 643 in 1881 to 1,609 in 1891 and 2,308 in 1901. In 1903–4 the District contained 5 secondary, 83 primary, and 155 elementary (private) schools, attended by 4,628 pupils (222 girls). The educational expenditure was Rs. 8,900, towards which municipal funds contributed Rs. 1,500, the District cess fund Rs. 4,200, Provincial funds Rs. 1,300, and fees Rs. 1,900.

Hospitals and dispensaries. The only hospital is at Kyaukpyu with 30 beds. In 1903 the number of cases treated was 7,970, including 319 in-patients, and 122 operations were performed. The Government contribution was Rs. 950, while the District cess fund granted Rs. 900, and Rs. 300 was subscribed by the public. The balance of the cost was borne by the municipality.

Vaccination. Vaccination is compulsory within municipal limits. In 1903–4 the number of persons successfully vaccinated was 7,215, representing 43 per 1,000 of population.

[Maung Pan Hla, *Settlement Report* (1900).]

Kyaukpyu Subdivision.—Subdivision of Kyaukpyu District, Lower Burma, consisting of the KYAUKPYU, MYEBON, and AN townships.

Kyaukpyu Township. — Coast township of Kyaukpyu District, Lower Burma, lying between 19° 5′ and 19° 38′ N. and 93° 30′ and 93° 56′ E., with an area of 416 square miles. It consists for the most part of the north-western half of the island of RAMREE. The population in 1901 was 42,424, a total only 408 greater than it had been at the preceding (1891) enumeration. It contains one town, KYAUKPYU (population, 3,145), the head-quarters of the township and District, and 272 villages. In 1903-4 the area cultivated was 54 square miles, paying Rs. 51,000 land revenue.

Myebon.—Coast township of Kyaukpyu District, Lower Burma, lying between 19° 38′ and 20° 16′ N. and 93° 13′ and 93° 51′ E., with an area of 441 square miles. The head-quarters are at the village of Myebon (population, 1,120), on an island at the northern end of Hunter's Bay, in the extreme north-west corner of the District. The township is hilly and intersected by tidal creeks. The population was 20,880 in 1891 and 24,100 in 1901. The number of villages is 146. The majority of the population are Buddhists, but there is a sprinkling of *nat*-worshipping Chins in its hill areas. The population is scattered and the density (54 persons per square mile) is low. About 58 square miles were cultivated in 1903-4, paying Rs. 61,000 land revenue.

An.—Township of Kyaukpyu District, Lower Burma, lying between 19° 16′ and 20° 40′ N. and 93° 45′ and 94° 26′ E., with an area of 2,861 square miles. It comprises practically the whole of the inland portion and nearly two-thirds of the whole District. In 1901 it contained 353 villages and 29,337 inhabitants, compared with 27,863 in 1891. A considerable portion is covered by the forests of the Arakan Yoma, and the density is only 10 persons per square mile. More than one-third of the population consists of Chins. The head-quarters are at An (population, 826), on the An river in the centre of the township, near the foot of the Yoma, over which a pass leads into the Minbu District of Upper Burma. About 39 square miles were cultivated in 1903-4, paying Rs. 31,000 land revenue.

Ramree (Burmese, *Yanbye*).—Township of Kyaukpyu District, Lower Burma, lying between 18° 43′ and 19° 22′ N. and 93° 40′ and 94° 2′ E., with an area of 449 square miles. It comprises the south-eastern half of the island of RAMREE. The

head-quarters are at Ramree (population, 2,540), near the eastern coast of the island. In 1901 it contained 247 villages and 46,058 inhabitants, or about 1,600 less than in 1891. A good deal of it is covered by low hills. The majority of the inhabitants are Buddhists. In 1903-4 the area cultivated was 55 square miles, paying Rs. 52,000 land revenue.

Cheduba (Burmese, *Manaung*).—South-western township of Kyaukpyu District, Lower Burma, consisting of the island of CHEDUBA, and lying between 18° 40′ and 18° 56′ N. and 93° 28′ and 93° 46′ E. Its head-quarters are at Cheduba (population, 1,540), in the north-east of the island. In 1901 the township contained 114 villages and 26,899 inhabitants (an increase of 1,559 since 1891). Its area is 220 square miles, and the density of population is 122 persons per square mile, which is higher than that of any other township in the District. The island has long been inhabited by people from Chittagong, and the name by which it is known to the British (said to be a corruption of *chār dhuba* or 'four capes') is of Indian origin. About 40 square miles were cultivated in 1903-4, paying Rs. 42,000 land revenue.

Kyaukpyu Town.—Head-quarters of the District of the same name, in Lower Burma, situated in 19° 26′ N. and 93° 34′ E., in the northern angle of the island of Ramree. Kyaukpyu signifies 'white stone,' and the name is said to be derived from the white pebbly beach that stretches in front of the town. When Arakan was ceded to the British in 1826 Kyaukpyu was only a small fishing village, and did not become the chief civil station till 1838. The town is built close to the sea-shore, on a sandy plain bounded on the south-west by a low range of sandstone hills, which break the severity of the monsoon. The harbour extends for many miles along the east shore of Ramree Island, but numerous sunken rocks render the approach dangerous, though it is well buoyed. The population of the town has remained stationary for the last thirty years, and was 3,145 in 1901, of whom the majority were Arakanese and Burmans. Musalmāns numbered 776, Hindus only 164, and Chinese about 600.

The shipping trade of Kyaukpyu is almost entirely coastwise. Its imports and exports were valued at 4 and 1½ lakhs respectively in 1903-4. Three-fourths of the imports come from other Burmese ports; the remainder from Calcutta. The exports go entirely to Burmese ports. The Port fund for the maintenance of buoys, lights, &c., had an income of Rs. 5,600 in 1903-4, obtained from dues and other levies.

Kyaukpyu town was constituted a municipality in 1885. The municipal income and expenditure during the ten years ending 1901 averaged about Rs. 8,000. In 1903–4 the income was Rs. 11,000, including Rs. 3,000 from house and land tax, and Rs. 6,000 from market tolls; and the expenditure was Rs. 10,000, the chief items being conservancy (Rs. 2,000), hospitals (Rs. 3,000), and education (Rs. 1,500). There is one Anglo-vernacular school, towards the up-keep of which Government and the municipality contribute equally.

Boundaries, configuration, and hill and river systems.

Sandoway District (Burmese, *Thandwe*).—A coast District in the Arakan Division of Lower Burma, formed by a narrow strip of seaboard lying between 17° 15′ and 19° 32′ N. and 94° 0′ and 94° 52′ E., with an extreme length of 179 miles, and an extreme breadth of 48 miles, and an area of 3,784 square miles. It is bounded on the north by the Ma-i river, which separates it from Kyaukpyu District; on the east by the Arakan Yoma, which divides it from Thayetmyo, Prome, Henzada, and Bassein; on the south by the Kyaukchun stream and the Kyadaung hills; and on the west by the Bay of Bengal. The southern boundary was formerly the Gwa river, but in 1893 a small tract to the south of that stream was added from Bassein District.

The District is mountainous. The spurs of the Arakan Yoma reach almost to the coast, so that not more than one-eighteenth of the area is level. Except in this plain, and on the sides of the hills where *taungya* or clearings are made, the District is covered with dense jungle of considerable variety, which adds much to its beauty. The main range of the Arakan Yoma has in the north a direction south-east by south; but it gradually curves towards the west, and at the source of the Gwa, where it crosses the border into Bassein District, it runs nearly due north and south. In the north some of the peaks attain an elevation little short of 5,000 feet, which falls to 3,200 feet at Shaukbin, where the Taungup pass crosses the range. South of 18° 21′ N. the height rapidly diminishes, and at the sources of the Gwa is only about 890 feet. From the mouth of the Sandoway river northwards the coast is indented with intercommunicating tidal creeks; southwards it presents a rugged and rocky barrier to the ocean. An uninhabited island, known as Foul Island, and called by the Burmese Nanthakyun, lies off the coast. The name is derived from a mud volcano, which gives the island its conical appearance, and at times pours out a strongly smelling torrent of hot mud bubbling with marsh gas.

Most of the rivers draining the District are but mountain torrents to within a few miles of the coast. The most important streams, all of which rise in the western slopes of the Arakan Yoma, are the Ma-i and the Tanlwe, falling into the arm of the sea which divides the island of Ramree from the mainland; the Taungup, entering the Bay of Bengal a little farther down the coast near the village of the same name; the Sandoway, a tidal river navigable by large boats as far as Sandoway town, but unfortunate in its roadstead, which is exposed and dangerous; and the Gwa, which falls into the Bay of Bengal at 17° 36′ N., and forms a good anchorage for steamers and vessels drawing from 9 to 10 feet of water.

Geology. The rocks of the District are mostly Cretaceous. The Ma-i river has given its name to a group of beds of the Arakan Yoma, which occupies a large part of the ground, the remainder being taken up by beds of Eocene age (Nummulitic). The Ma-i beds comprise limestone, shales, and greyish-green sandstone, while shales, sandstone, and some limestones make up the strata of the Nummulitic group.

Botany. Almost the whole face of the country is covered with forest, varying in kind according to the elevation of the land, whether low, slightly hilly, or high. The lowest ground, within tidal limits, is covered with dense mangrove jungle. Above this, interspersed among the rice plains, trees such as the *pyinma* (*Lagerstroemia Flos Reginae*) and the *kanyinbyu* (*Dipterocarpus alatus*) are found in some numbers; and as soon as the ground rises, dry forest appears and forms a belt along the lower hill slopes. The most important and characteristic trees here are the *pyingado* (*Xylia dolabriformis*), the *in* (*Dipterocarpus tuberculatus*), the *pyinma*, the *kanyinbyu*, the *thingan* (*Hopea odorata*), the *zinbyun* (*Dillenia pentagyna*), and the *myaukchaw* (*Homalium tomentosum*). Various kinds of palm are common, especially the *dani* (*Nipa fruticans*).

Fauna. The fauna is very rich and varied, including elephants, tigers, rhinoceros, leopards, wild cats, bears, bison, wild hog, deer, monkeys, and crocodiles. The jackal is pressing in on the north, and is now quite common in the neighbourhood of Taungup. Game birds are plentiful.

Climate and temperature. The climate of Sandoway is generally considered to be more pleasant and healthy than that of any other part of Arakan. As throughout Burma, the year falls into three seasons: the cold season, from November to February; the hot season, from February to May; and the wet season, from May to October.

The mean monthly maximum and minimum temperatures are 90° in June and 72° in January.

Rainfall. The rainfall is very heavy. During the three years 1902-4 it averaged 189 inches over the District, ranging from 158 inches at Gwa to 201 at Taungup, and amounting to 198 inches at Sandoway itself. July is the rainiest month of the year. Floods are not uncommon in the Sandoway township. The creeks being narrow, the superfluous water received during heavy rains causes them to overflow their banks, and in some cases to damage cultivated fields, though in other cases the loam deposited helps to enrich the soil.

History and archaeology. The origin of the name of the District is obscure. The following is one of the most imaginative of the derivations assigned to it in the palm-leaf chronicles. There reigned in Benares, at a time when the duration of human life was 90 millions of years, a descendant of the first Buddha of the present epoch, one of whose sons received as his portion the country now forming Sandoway District. For him the *nats* or spirits built a city, Dwārawadi, near the modern Sandoway. Many ages later a branch of another Benares house overthrew the ruling dynasty and started a line of their own in Dwārawadi. During the reign of the last of these monarchs the country was attacked by the grandsons of a king who ruled in Mogaung. Arriving at the mouth of the Thandwe river, the invaders failed in their attempts to find the city, owing to the devices of its guardian *nat*, or, as some say, to its miraculous power of soaring above the earth in times of danger. At length the guardian withdrew her protection, and the brothers then bound the city to the earth with an iron chain and divided their conquest into ten shares, making Thandwe ('iron-bound') their capital. The legend of the rule in Sandoway of princely houses from Benares rests probably on no basis of fact; but that there has been at least one Shan invasion of Arakan is certain, and there seems no reason to doubt that at one time Sandoway was the capital of the kingdom of Arakan. In later years Sandoway appears only as a province of the Arakan kingdom, until the conquest of Arakan by the Burmans in 1784. It was then formed into a governorship, and its *wun* or governor was one of the commanders of the Burmese army which invaded Bengal at the beginning of the first Burmese War. The country was ceded to the British with the rest of Arakan by the Treaty of Yandabo in 1826, and was at first garrisoned by a regiment of native infantry. A few years later the military head-quarters were transferred to Kyaukpyu. In 1890 Sandoway town was

attacked by a band of fanatics headed by certain *pongyis*. The insurgents succeeded in setting fire to the courthouse, but dispersed when fired upon by the police, and since then the District has enjoyed uninterrupted quiet.

Sandoway does not boast of many antiquities; but it possesses three features of archaeological interest in the pagodas known as the Sandaw, Andaw, and Nandaw, on the hills near Sandoway town. These pagodas are said to have been erected by the old Arakanese kings in the years A.D. 761–84, to cover respectively a hair, a tooth, and a rib of Gautama. Three times a year pilgrims resort to these pagodas, remaining one day at each shrine. Ancient silver coins are sometimes found, struck by kings of Arakan, some of which bear dates and names in Burmese characters, and others in Persian or varieties of Nāgari. Stones inscribed in Sanskrit, of the eighth century, have been discovered near the Sandoway river.

The population at the last four enumerations was: (1872) 55,325, (1881) 65,182, (1891) 78,509, and (1901) 90,927. The principal statistics of area and population in 1901 are given in the following table:— The people.

Township.	Area in square miles.	Number of Towns.	Number of Villages.	Population.	Population per square mile.	Percentage of variation in population between 1891 and 1901.	Number of persons able to read and write.
Taungup	1,510	...	225	32,948	22	+ 13	5,980
Sandoway	1,010	1	231	39,542	39	+ 16	7,439
Gwa	1,264	...	177	18,437	15	+ 20	3,757
District total	3,784	1	633	90,927	24	+ 16	17,176

For Lower Burma the rate of growth during the past thirty years has been slow, though the population has increased more rapidly than in the adjacent District of Kyaukpyu. The density is still, however, below that of Kyaukpyu, and in view of the large proportion of hill country is never likely to be much enhanced. In 1901, 79,400 persons (or 87 per cent. of the population) were Buddhists, 6,500 (7 per cent.) Animists, and 3,900 (4 per cent.) Musalmāns. The tide of Muhammadan immigration, which has flooded the northern portion of the coasts of Arakan, can hardly be said to have yet penetrated as far south as Sandoway. In 1901 the Hindus numbered only 558. Burmese was spoken by 54,300 persons, Arakanese by 28,100, and Chin by 7,100.

Race and occupation.

The number of Arakanese in the District in 1901 was 29,400; but, unlike Akyab and Kyaukpyu, Sandoway possesses more Burmans than Arakanese, the total of the former being 49,700. The only other indigenous race of importance are the Chins, who inhabit the eastern hill areas and numbered 6,800 in 1901. The number of those engaged in or dependent upon agriculture in 1901 was 71,800, or nearly 79 per cent. of the total population, a very high proportion. Of the total, about 11,000 were returned as dependent upon *taungya* cultivation alone.

Christian missions.

There were 528 Christians in 1901, of whom 477 were natives, mostly Baptists. The American Baptist Union has established a church in Sandoway, and a school for Chin children. The mission has a good many converts among the Chins and a few among Burmans.

General agricultural conditions.

The prevalent soils are loams, more or less sandy. Owing to the hilly conformation of the surface, there are no large homogeneous tracts. In the low-lying lands which receive the drainage from the surrounding hills, the soil may be excellent, while that on neighbouring slopes may be poor. A tract classification was, however, made at the settlement of 1897-8, as follows. The best land includes the greater portion of the Taungup township, a belt of land on both banks of the Sandoway river, an open space surrounded by hills in the Sandoway township, and a few scattered areas of excellent crop-bearing land in the Gwa township. A second tract consists of the lighter and inferior soils found in the vicinity of Taungup, and some scattered stretches near the sea-coast and on the slopes of the hills in the Sandoway and Gwa townships. The last division is a sandy ridge along the coast of the Bay of Bengal, stretching from Padin to Gwachaung, where the soil is very much exhausted and inferior to that in the other two areas.

Taungya or hill gardens are worked chiefly for sugar-cane, plantains, cotton, and Indian corn, while rice, tobacco, and sesamum are grown in the plains and valleys. Different systems of cultivation are followed in different parts of the District. In the Taungup and Sandoway townships, where the rainfall is exceedingly heavy, an ordinary plough is used to turn the soil soon after the beginning of the rains; but in the Gwa township the surface of the land is simply scraped with harrows before the seed is sown.

Chief agricultural statistics and principal crops.

The occupations of the people are almost exclusively agriculture and fishing. Rice holdings as a rule are too small to support a family, and rice cultivators engage also in the

cultivation of miscellaneous crops, as well as in fishing and cattle-breeding.

Only 106 square miles were cultivated in 1903-4, but this represents an increase of nearly 50 per cent. since 1880-1. The principal crops grown in 1903-4 were: rice, 92 square miles; tobacco, 1,900 acres; and sugar-cane. The staple food-grain is rice; other food-crops are chillies, plantains, coco-nuts, and Indian corn. Of garden fruits, mangoes, pine-apple, and jack are grown throughout the District, but are of inferior quality. The area under garden cultivation is 1,900 acres. The *dani* palm covers 3,100 acres, for the most part in the Taungup township, while tobacco is grown mainly in the Sandoway township.

Improvements in agricultural practice.

Agricultural loans amounting to a few hundred rupees yearly are given under the Agriculturists' Loans Act; but nothing is advanced under the Land Improvement Loans Act, and very little is done by the people themselves to improve their agricultural methods.

Cattle, &c.

No systematic cattle-breeding is carried on, but the stock employed is mainly home-bred. Ponies are scarce, and would be of little use in this country of hill ridges and tidal creeks. The grazing problem is not acute, for abundant fodder is to be had on the hills, and almost every village has grazing-grounds sufficient for its need. A little difficulty is, however, sometimes experienced near the sea beach, where the grass is apt to dry up by the end of the dry season. Cattle-disease is rare. This has been ascribed to the industry of the cultivators in supplying their cattle with water from wells during the hot season, instead of allowing them to drink from the tanks in which they bathe.

Irrigation and fisheries.

The District has no system of irrigation; cultivation is dependent upon the annual rainfall, which fortunately is on the whole regular. Unseasonable rain or breaks in the monsoon sometimes cause local scarcity owing to the deficiency of communications, but widespread distress is unknown. The only important leased fisheries are the Maungdauk and Migyaungye turtle-banks, which fetch about Rs. 800 annually. Net licences are issued by township officers and circle *thugyis*. The number of fishermen and their dependents in 1901 was 1,404.

Forests.

A description of the forests has been given under the head of botany. From an economic point of view, the three most valuable trees are the *pyingado* (*Xylia dolabriformis*) or ironwood, a timber almost equal to teak in hardness, and much

used for house-building, railway sleepers, and furniture; the *in* (*Dipterocarpus tuberculatus*), a useful timber from which a thick resin is extracted; and the *kanyinbyu* (*Dipterocarpus alatus*), a large tree which yields an inflammable oil, much used in making torches. It is only recently that the Forest department has extended its operations regularly into the District. There is a teak plantation of 7½ acres near Sandoway town. Teak trees exist also near Taungup and on the upper waters of the Thade river. The forest receipts in 1903-4 were slightly in excess of Rs. 7,000.

Minerals. There are no minerals of any importance, so far as is known. Carbonaceous deposits have from time to time been reported in the neighbourhood of Sandoway, but it is not probable that the coal is of value. Limestone is burnt in certain circles. Salt-boiling is carried on in a few villages near the coast. Salt is manufactured in two ways, known locally as *sitpo* and *lebo* (the 'straining' and the 'field' processes). By the first method the saline crusts are gathered after ebb-tide, the salt contained in them is dissolved and the solution boiled. In the second the salt water is evaporated on the fields and the process repeated till the brine is sufficiently concentrated, when it is drained off into a tank. In boiling, iron cauldrons and earthen pots are used—the former exclusively in the Sandoway, and the latter in the Taungup township.

Arts and manufactures. The manufactures as a whole are few and unimportant. Bricks are burnt in the neighbourhood of Sandoway. Pots (unglazed) of the usual kind are made at Kinmaw and Natmaw. Rough mat-plaiting and thatch-making are universal. Silk and cotton-weaving are common in the villages, where the women work on hand-looms to supply the local demand. The Chins weave and embroider shawls of good quality and artistic design. Sugar-cane mills worked by cattle are common. The juice obtained is boiled down into jaggery, which is exported to Akyab in large quantities, the total produce being estimated at over 1,600 tons a year. There is a steam saw-mill at Gyiwa, half-way between Sandoway and Taungup.

Commerce and trade. The commerce of Sandoway is not extensive or important. It consists chiefly of a small coasting trade in salted fish, rice, and vegetables with Akyab and Kyaukpyu along the tidal creeks, and of a land trade with the Pegu and Irrawaddy Divisions over the Arakan Yoma by way of several passes: namely, the old military road from Taungup to Prome, and four smaller routes starting from the Gwa township and known as the Ponsogyi, Lekkok, Bawmi, and Thitkauk routes. The

Gwa township also carries on a small trade by sea during the favourable season with parts of Bassein District. The merchandise, consisting chiefly of fish, rice, hides, and jaggery, is transported in *thanpans*, native-built boats of English design, often over 50 feet in length. The principal exports are salted fish and *ngapi* (fish-paste), rice, timber, cattle, horns, hides, tamarinds, chillies, jaggery, and coco-nuts. These go to Akyab, Kyaukpyu, Bassein, Rangoon, and Prome. Railway sleepers are sent as far as Chittagong. The imports are cotton twist, silk and other apparel, oils, and iron; large quantities of tobacco and betel-nuts are also imported into the Gwa township.

Communications and public works.

The means of communication are as yet very imperfect. There are no railway lines, and only three metalled roads of short length, maintained by the Public Works department—one from Sandoway southwards to Padegaw, about 9 miles, now being continued south to Kyeintali; another from Sandoway westwards to Lintha on the coast, 6 miles; and a third of 5 miles from Sandoway north-westwards to Kinmaw. The roads from village to village are mere foot-tracks without any banking or formation. The new road from Sandoway to Kyeintali will eventually be extended to Gwa, and will facilitate communication between the northern parts of the District and the Irrawaddy delta. The only means of communication eastwards are the passes over the Arakan Yoma mentioned above. The chief of these connects the village of Taungup in the north with Padaung on the Irrawaddy, in Prome District. This is an old route which was followed by the Burmans in their invasion of Arakan in 1784, and again by the British in 1825, though it was then pronounced to be unfit for troops or laden cattle. The road has since been considerably widened and rendered practicable for cart traffic, and has recently been surveyed for a railway line. Its value as a trade route is not, however, very great, for it is not metalled and cannot be used by carts during the rains. The other passes are not much used.

In the Taungup and Sandoway townships travelling by water is practicable during most of the year, as from the mouth of the Sandoway river northwards the coast is indented with navigable tidal creeks, by means of which communications can be kept up. Southwards the coast is rugged and rocky, with few available harbours. The steamers of the British India Company call weekly each way at the mouth of the Sandoway river, communication between the roadstead and

the town of Sandoway, 15 miles off, being maintained by launch. Only small steamers of 19 or 20 tons can ascend the river as far as Sandoway town, and in the dry season even these are detained till the tide serves. This is the cause of much delay and inconvenience, both in the delivery of mails and in the expedition of merchandise.

Foul Island has been surveyed with a view to the building of a lighthouse. At present no portion of the coast of the District is lighted.

District subdivisions and staff.

The District is divided into three townships: TAUNGUP in the north, SANDOWAY in the centre, and GWA in the south. There are no subdivisions. The head-quarters magistrate is in charge of the treasury at head-quarters; where also are an *akunwun* in charge of the revenue and a superintendent of land records, under whom are 2 inspectors and 10 surveyors. The excise staff is under the District Superintendent of police, subject to the control of the Deputy-Commissioner. The District forms a subdivision of the Arakan Public Works division, which is conterminous with the civil Division.

The northern township, where the system of revenue collection by the agency of village headmen has as yet been introduced only to a small extent, has six circle *thugyis*; the central four; and the southern none. The total number of village headmen in the District is 233, of whom 106 are revenue collectors, remunerated by commission at 6 and 7 per cent. in the northern and central townships, and at 10 per cent. in the southern township.

Civil justice and crime.

The Deputy-Commissioner and the township officers are magistrates and judges for their respective charges, and the treasury officer is additional judge of the Sandoway township court. He does all the civil work of that court, and also tries criminal cases when the township officer is on tour. Fifteen of the village headmen have been empowered to try certain classes of petty civil suits, and two have special criminal powers under the Village Act. There are benches of honorary magistrates at Sandoway and Taungup.

Revenue administration.

Under native rule revenue from land in Sandoway was taken in the shape of a plough tax. Five baskets of paddy were levied for each pair of buffaloes used in ploughing, half a basket being claimed by the keeper of the royal granary as wastage. A poll tax and transit dues were also collected. In 1828, shortly after the annexation of Arakan, it was calculated that every head of a family paid Rs. 17 per annum in the shape of revenue to Government. In 1865–6 a partial

settlement was carried out by the Deputy-Commissioner, resulting in a few reductions of rates on account of the alleged exhaustion of the soil and a desire to encourage the cultivation of waste land, and there were further settlement operations in 1890–1; but practically there may be said to have been a uniform rate of Rs. 1–10–0 per acre throughout the District until 1897–8, when an area of 148 square miles which had been cadastrally surveyed in 1892–3, and brought under supplementary survey in 1894–5, was classified according to the fertility of the soil and regularly settled. The average rate for rice land over the whole District is now Rs. 1–9–1 per acre, and, in the settled areas, ranges from 14 annas to Rs. 2–8–0. Garden cultivation is assessed at a uniform rate of Rs. 1–12–0, and miscellaneous cultivation at Rs. 2 to Rs. 4. Over the unsettled area the rates vary from 4 annas to Rs. 1–10–0. A further area of 120 square miles was surveyed in 1901–2, and summarily settled in 1903–4. The average extent of a holding in the settled tract is 2·8 acres, and in the unsettled tract 2·5 acres. A grant of 452 acres under the old waste-land grant rules of 1865 still exists at Indainggyi. The capitation tax rates are Rs. 4 on married couples and Rs. 2 on single persons, except in a few Chin villages, where lower rates of Rs. 2 and R. 1 are in force.

The following shows, in thousands of rupees, the growth in the revenue since 1880–1:—

	1880-1.	1890-1.	1900-1.	1903-4.
Land revenue . .	47	55	79	1,12
Total revenue . .	1,49	1,62	2,30	2,68

The total revenue for 1903–4 includes excise (Rs. 62,000) and capitation tax (Rs. 72,000). The excise receipts include Rs. 49,500 from opium, Rs. 4,000 from *tāri* (made from the juice of the *dani* palm), and Rs. 4,000 from country spirit. Four shops are licensed for the sale of *kaung*, a favourite liquor among the Chins and an important adjunct at their *nat*-worshipping festivals.

Local funds.

The District cess fund, the income of which is derived mainly from a rate of 10 per cent. on the total land revenue, is administered by the Deputy-Commissioner for the maintenance and construction of roads and other local necessities. The income in 1903–4 was Rs. 14,000. The only municipality is that of SANDOWAY, which was constituted in 1885.

Police and jails.

The District contains nine police stations and one outpost.

The District Superintendent is assisted by 2 inspectors, and the force consists of 3 head constables and 138 sergeants and constables, besides 1,259 rural police. There are 75 military police, stationed at Sandoway, Taungup, Lamu, Kyeintali, and Gwa. The District jail has accommodation for 84 prisoners. Mat-making, cane-work, coir-work, gardening, and carpentry are carried on by the prisoners.

Education. The standard of education in Sandoway is not high. At the same time, though below the Provincial mean, the proportion of literate males in every thousand (343) is higher than in any of the other Districts of the Arakan Division. For females the corresponding figure is 32, and for both sexes together 189. The total number of pupils was 650 in 1880–1, 1,034 in 1890–1, and 1,586 in 1900–1. In 1903–4 there were 6 secondary, 48 primary, and 60 elementary (private) schools, with 2,329 male and 276 female pupils. The most important schools are the Sandoway municipal Anglo-vernacular school, and the American Baptist Anglo-vernacular Chin school, also in Sandoway town. The American Baptist Union have opened a number of small schools for Chins in the rural areas. The majority of these, however, have not come under the Educational department and draw no results-grants. The expenditure on education in 1903–4 from municipal funds was Rs. 2,800; from Provincial funds, Rs. 600; and from the District cess fund, Rs. 1,900. Receipts from fees at the municipal school amounted to Rs. 3,200.

Hospitals and dispensaries. There are two hospitals, with accommodation for 20 in-patients. During 1903 the number of in-patients treated was 318, and that of out-patients 18,677, and 257 operations were performed. The expenditure in the same year was Rs. 4,000, chiefly borne by Local and municipal funds.

Vaccination. Vaccination is compulsory in Sandoway municipality, but not in the interior of the District. The proportion of the population protected is, however, said to be fairly high. In 1903–4 the number of persons successfully vaccinated was 1,735, representing 19 per 1,000 of population.

[B. Houghton, *Settlement Report* (1892); Maung Pan Hla, *Settlement Report* (1899).]

Taungup.—Northernmost township of Sandoway District, Lower Burma, lying between 18° 38′ and 19° 32′ N. and 94° 0′ and 94° 44′ E., with an area of 1,510 square miles. The head-quarters are at the village of Taungup (population, 1,707), about 6 miles from the mouth of the Taungup river, which flows from the Arakan Yoma westwards into the sea

almost opposite the southern extremity of the island of Ramree. With the exception of a few stretches of rice land along the river valleys, the township is a mass of hills cut up towards the coast by creeks. In 1901 it contained 225 villages and a population of 32,948, compared with 29,088 in 1891. The inhabitants of the eastern hill areas are largely Chins. The area cultivated in 1903–4 was 37 square miles, paying Rs. 40,800 land revenue.

Sandoway Township.—Township of Sandoway District, Lower Burma, lying between 18° 2′ and 18° 46′ N. and 94° 13′ and 94° 52′ E., with an area of 1,010 square miles. It occupies the central portion of the District. The population in 1901 was 39,542, compared with 34,090 in 1891. It contains one town, SANDOWAY (population, 2,845), the head-quarters of the township and District, and 231 villages. It has a fairly large number of Chin inhabitants in the hilly country which forms the greater part of its area, but not so many as the Taungup township, and Indians outnumber the Chin population. It is full of tidal creeks, and there is a little plain land along the valley of the Sandoway river. The area cultivated in 1903–4 was 47 square miles, paying Rs. 48,700 and revenue.

Gwa.—Southernmost township of Sandoway District, Lower Burma, lying between 17° 15′ and 18° 10′ N. and 94° 25′ and 94° 49′ E., with an area of 1,264 square miles. It lies between the Arakan Yoma and the Bay of Bengal, presenting to the latter a long stretch of rock-bound coast. The population was 15,331 in 1891, and 18,437 in 1901, the density being only 15 persons per square mile. The head-quarters are at the village of Gwa (population, 1,436), at the mouth of the Gwa river in the extreme south of the District. There are 177 villages. The majority of the population are Buddhists, but the Chin communities, inhabiting the Arakan Yoma to the east of the township, are mostly spirit-worshippers. The area cultivated in 1903–4 was 22 square miles, paying Rs. 22,800 land revenue.

Sandoway Town.—Head-quarters of the District of the same name in Lower Burma, situated in 18° 28′ N. and 94° 21′ E., on the left bank of the Sandoway river, 15 miles to the south-east of its mouth and between 4 and 5 miles due east of the sea-coast in a direct line. The town lies in a hollow, about 12 miles long by 1 broad, which is cultivated with rice and surrounded by hills. The greater part of it slopes gently from the river bank to the Zi chaung, which

flows into the river at the west end of the town. The native town is backed by a low hill, on which stands the civil station occupied by the European officials. The officers' residences are in a semicircle overlooking the jail. The courthouse is some little distance off, nearer the river.

It is probable that Dwārawadi, the earliest known capital of the kingdom of Arakan, was, if not identical with Sandoway, at any rate in its neighbourhood. Sandoway was a town of some note at the commencement of the nineteenth century. It was occupied without resistance in the first Burmese War, and was subsequently for some time the head-quarters of the garrison of Arakan. Its growth of late has not been rapid, and it is still little more than a large village. The population in 1901 was 2,845, of whom 1,640 were Buddhists, 967 Musalmāns, and 238 of other beliefs. Sandoway was constituted a municipality in 1885, and is the smallest municipality in Burma. The receipts of the municipal fund during the ten years ending 1901 averaged Rs. 8,300, and the expenditure Rs. 7,500. In 1903-4 the receipts were Rs. 11,000, and the expenditure Rs. 9,000. House and lighting taxes are levied, but market tolls are the most substantial item of revenue, yielding Rs. 6,000. Sandoway, though in direct communication with a roadstead where ocean steamers call, can be reached only by craft of very light draught, and has not been declared a port under the Ports Act. Its trade is registered by the Customs department, but is very small, and its foreign commerce is insignificant. The imports by coasting trade in 1903-4 were valued at Rs. 2,39,000, and the exports at Rs. 26,000. The imports are almost entirely from other ports in Burma. A considerable portion of the export trade of the District does not pass through Sandoway town. It contains a small jail, with accommodation for 84 prisoners, a hospital, and several schools. One of the most important of these is the municipal Anglo-vernacular school, with an attendance of about 120. There is also a mission school for Chins, managed by the American Baptist Union, with 70 Chin pupils in 1903, of whom 24 were girls.

PEGU DIVISION

Pegu Division.—Division of Lower Burma, lying between 16° 19′ and 19° 11′ N. and 94° 41′ and 96° 54′ E., and comprising the bulk of the strip of country that stretches between the Irrawaddy and the Sittang rivers from 19° N. to the Gulf of Martaban, and, with the exception of a single township, wholly to the east of the former river. It is well watered and, except for the area covered by the Pegu Yoma at the northern end, forms one expanse of plain land of extraordinary fertility.

The population of the Division at the last four enumerations was: (1872) 848,077, (1881) 1,215,923, (1891) 1,523,022, and (1901) 1,820,638. Its head-quarters are at RANGOON, and it contains the following Districts:—

District.	Area in square miles.	Population, 1901.	Land revenue, 1903-4, in thousands of rupees.
Rangoon City . .	19*	234,881	32
Hanthawaddy . .	3,023	484,811	34,29
Tharrawaddy . .	2,851	395,570	11,22
Pegu	4,276	339,572	18,72
Prome . . .	2,915	365,804	4,81
Total	13,084	1,820,638	69,36

* Exclusive of river areas.

Of the inhabitants in 1901, 1,541,388 were Buddhists, 65,534 Musalmāns, 152,191 Hindus, 38,274 Christians, and 21,709 Animists, the majority of the remainder being Sikhs and Jews. According to race, 1,330,816 were Burmans, 103,420 Karens, and 78,576 Talaings. The density was 139 persons per square mile, or a little over three times as great as that of the Province as a whole. In 1901 the Division contained 8 towns and 6,817 villages. Of the towns only two—RANGOON (234,881) and PROME (27,375)—had a population exceeding 20,000. Rangoon lies at the southern end of the Division, and there is no other commercial centre. In PROME and PEGU, however, it possesses towns of historical interest, once the capitals of two dynasties of the past, that of the Pyus in the north and that of the TALAINGS in the south, and both the scene of warlike

operations during the first and second Burmese Wars. Syriam, close to and west of Rangoon, also has a place in the history of Burma as a famous emporium of olden days, and one of the first of the ports at which the people of the country entered into commercial relations with the strangers who were destined centuries later to be their conquerors.

Description. **Rangoon City.**—The capital of Burma and head-quarters of the Local Government, situated in 16° 46′ N. and 96° 11′ E., on both sides of the Hlaing or Rangoon river at its point of junction with the Pegu and Pazundaung streams, 21 miles from the sea. The greater part of the city—the town proper, with its main suburbs of Kemmendine and Pazundaung—lies along the left or northern bank of the river, which at this point, after a southerly course through level paddy-fields and along the city's western side, turns towards the east for a mile or so before bending southwards to the Gulf of Martaban. Behind the array of wharves and warehouses that line the northern bank rise the buildings of the mercantile and business quarter, and thence the ground slopes upwards through a wooded cantonment to the foot of the slight eminence from which the great golden Shwedagon pagoda looks down upon the town and harbour. On the south bank of the Rangoon river are the suburbs of Dala, Kamākasit, Kanaungto, and Seikgyi, a narrow strip of dockyard premises and native huts on the fringe of a vast expanse of typical delta paddy-fields. These mark the southern limit of the city. To the west the boundary is the western bank of the Hlaing; to the east the Pazundaung and Pegu streams hem the city in; to the north the municipal boundary runs through the slightly undulating wooded country into which the European quarter is gradually spreading.

Population. The population of the city at each of the last four enumerations was as follows: (1872) 98,745, (1881) 134,176, (1891) 180,324, and (1901) 234,881. After the three Presidency towns and the cities of Hyderābād and Lucknow, Rangoon is the most populous city in the Indian Empire. Its rate of growth is, as the census figures show, considerable. The actual increase between 1891 and 1901 (54,557) was little less than that of Madras, a city of more than double its inhabitants, while the growth between 1872 and 1901 (136,136) is exceeded only by that of Calcutta among all Indian cities. A large portion of the increase is due to immigration from India. The number of persons born in India resident in the city was 65,910 in 1891 and 117,713 in 1901 (of whom only 16 per cent. were women). Nearly two-thirds of these foreigners came from Madras, and

about one-fifth from Bengal. The Chinese colony has increased from 8,029 in 1891 to 11,018 in 1901. Of the population in 1901, 83,631, or more than one-third, were Buddhists, but the Hindu aggregate (82,994) was almost as large. Musalmāns numbered 43,012, and Christians 16,930, of whom about one-half were Europeans and Eurasians, the number of native Christians being 8,179. The Society for the Propagation of the Gospel and the American Baptist Mission labour in the city. The Wesleyans, Presbyterians, and other Protestant denominations are also represented, and there is a large Roman Catholic mission.

Rangoon has been the administrative head-quarters of the Province ever since the second Burmese War added Pegu to the Indian Empire. It was never, however, a royal capital, and its importance as a mercantile centre is of comparatively recent development. History.

According to Talaing tradition, the first village on the site of modern Rangoon was founded about 585 B.C. by two brothers, Pu and Ta Paw, who had received some of Gautama's hairs from the Buddha himself, and, acting on his instructions, enshrined them in the famous Shwedagon pagoda. Punnarika, who reigned in Pegu from A.D. 746 to 761, is said to have refounded the town, and called it Aramana, and it was not till later that it regained its original name of Dagon. The Talaing records relate how it was occupied by the Burmans in 1413; how Byanyakin, the son of Razadirit, was appointed governor; and how Shinsawbu, his sister, in whose memory a national festival is celebrated each year, built herself a palace here in 1460. After this, however, the town gradually sank into a collection of huts. Dala, now a suburb on the right bank of the Hlaing, and Syriam on the opposite side of the Pegu river, are repeatedly noticed, but of Dagon little or nothing is said.

In the wars between the sovereigns of Burma and Pegu, Dagon frequently changed hands; and when in 1753 Alaungpayā (Alompra) drove out the Talaing garrison of Ava (then the Burmese capital), and eventually conquered the Talaing dominions, he came down to Dagon and repaired the great pagoda. Alaungpayā for the most part rebuilt the town, gave it the name of Yan Kon ('the end of the war') or Rangoon, which it has ever since borne, and made it the seat of a viceroy. Until 1790 it was the scene of incessant struggles between the Burmans and Peguans. In that year the place was captured by the latter, but the rising was speedily quelled by Bodawpayā.

About this period the East India Company obtained leave

to establish a factory in Rangoon, and the British colours were hoisted over it. In 1794 differences arose in Arakan and Chittagong between the East India Company and the Burmese government, and in the following year Captain Symes was sent on an embassy to Ava, one of the results of his mission being the appointment of a British Resident at Rangoon in 1798. Symes thus describes Rangoon as he saw it:—

'It stretches along the bank of the river about a mile, and is not more than a third of a mile in breadth. The city or *myo* is a square surrounded by a high stockade, and on the north side it is further strengthened by an indifferent fosse, across which a wooden bridge is thrown. In this face there are two gates, in each of the others only one. On the south side, towards the north, there are a number of huts and three wharves with cranes for landing goods. A battery of 12 cannon (six and nine-pounders) raised on the bank commands the river, but the guns and carriages are in such a wretched condition that they could do but little execution. The streets of the town are narrow and much inferior to those of Pegu, but clean and well paved. The houses are raised on posts from the ground. All the officers of the government, the most opulent merchants, and persons of consideration live within the fort; shipwrights and persons of inferior rank inhabit the suburbs.'

In the first Burmese War (1824) Rangoon was taken by the British. During the early part of the campaign strenuous efforts were made by the Burmans to recapture it; but it was occupied, though not without heavy losses from sickness, as well as from casualties in action, till 1827, when it was evacuated in accordance with the terms of the Treaty of Yandabo. In 1840 the appearance of Rangoon was described as suggestive of meanness and poverty. In 1841 king Konbaung Min, better known as prince Tharrawaddy, ordered the town and stockade to be removed about a mile and a quarter inland to the site of Okkalaba, and to be called by that name. The royal order was to a certain extent obeyed, the principal buildings and government offices were placed in the new town, and were there when the British force landed and captured Rangoon in April, 1852, on the outbreak of the second Burmese War. From this time onwards the place has remained in possession of the British, its history being one of marvellous development, but, with one or two exceptions (such, for instance, as a riot that occurred in June, 1893), devoid of striking incidents. The city was separated from Hanthawaddy District, of which it formed part, in 1879.

The principal pagodas are the Shwedagon to the north-east of the cantonment, said to contain the relics of no less than

four Buddhas, namely, the water-strainer of Krakuchanda, the staff of Kāsyapa, the bathing robe of Konāgāmana, and eight hairs of Gautama; the Sule pagoda, a more ancient but less pretentious shrine in the centre of the business quarter; and the Botataung pagoda on the river face in the south-east of the town.

Arts and manufactures. Rangoon is famous for its carvers in wood and ivory, and for the beauty of its silver work, which mostly takes the shape of embossed bowls. An art exhibition is held annually, and is no doubt helping to stimulate an interest in art among native workers. Many beautiful specimens of wood-carving are to be found in the shrine of the Shwedagon pagoda.

The factories are for the most part concerned with the preparation of the three principal exports: rice, timber, and oil. Of rice-mills, where the paddy brought from the surrounding rural areas is husked and otherwise prepared for the market, there are about fifty, and of saw-mills about twenty. The petroleum refinery deals with the produce of the earth-oil wells of the dry zone of Upper Burma. The total number of factories in 1904 was 99.

Commerce and trade. About five-sixths of the maritime trade of Burma passes through Rangoon, and a history of the commerce of the Province is very little more than a history of the progress of this single port. Since Rangoon became an integral part of the British dominions, its trade has increased by leaps and bounds. In 1856–7 the value aggregated only a crore. By 1881–2 this figure had risen to 11 crores, and by 1891–2 to 19 crores. In 1901–2, in spite of a more stringent tariff than in the past, it had mounted up to close on 26 crores, while 1903–4 showed a further advance of nearly 6 crores on the figures for the previous year. Under practically all the main heads of import and export the growth has been steady. Imports of cotton piece-goods, which in 1881–2 were valued at $6\frac{3}{4}$ lakhs, were valued at nearly 15 lakhs in 1901–2. Provisions have risen in value from 3 to 11 lakhs within the same period, coal from 1 to $3\frac{1}{2}$ lakhs, tobacco from 2 to 4 lakhs, spices from $2\frac{1}{3}$ to $4\frac{1}{2}$ lakhs. Among exports the development has been even more marked. The staple produce of the country is rice. The value of exports in this single commodity amounted in 1901–2 to $9\frac{3}{4}$ crores, compared with 6 crores in 1891–2 and $3\frac{1}{4}$ crores in 1881–2. Next in importance comes teak timber, with a growth in value from 22 lakhs in 1881–2 to 91 lakhs in 1901–2, followed by oil, which has risen from 2 lakhs in the former year to 81 in the latter. Cutch is the only important export that has shown a falling off in recent years.

The following table shows, in thousands of rupees, the actual figures of imports and exports (excluding Government stores and treasure) for the three years selected, and for 1903–4:—

	1881–2.	1891–2.	1901–2.	1903–4.
Imports . .	5,66,96	10,13,58	11,16,69	14,24,68
Exports . .	5,65,83	9,04,20	14,66,17	17,54,56
Total	11,32,79	19,17,78	25,82,86	31,79,24

During the same period the customs revenue rose from 44 lakhs in 1881–2 to 60 lakhs in 1891–2, to 91 lakhs in 1901–2, and finally to over a crore in 1903–4. Owing to the increasing employment of vessels of large burthen, the number of ocean-going steamers entering Rangoon has not risen to an extent proportionate to the growth in trade and tonnage, the figures for 1881–2 being 931 vessels with an aggregate capacity of 655,000 tons, while those for 1903–4 were 1,190 vessels with a capacity of 2,005,000.

Rangoon has entered upon an era of prosperity which shows no immediate prospect of waning. The port is administered by a Port Trust constituted under the Rangoon Port Act, 1905, which supervises the buoying and lighting of the river, and provides and maintains wharf and warehouse accommodation. The receipts of the Trust in 1903–4 aggregated nearly 18 lakhs. Rangoon is the terminus of all the lines of railway in the Province. Starting from Phayre Street station, the lines to Prome and Bassein pass westwards between the municipality and the cantonment, and thence northwards through the suburb of Kemmendine. There are frequent local trains along this section of the railway, and several stations within the limits of the city. The main line to Mandalay and Upper Burma runs generally eastwards from the terminus through the suburb of Pazundaung, and, skirting the mills that line the Pazundaung creek, passes north-eastwards into Hanthawaddy District. There are 80 miles of roads within city limits, of which about 60 are metalled. A steam tramway runs east and west through the heart of the business quarter, as well as northwards as far as the Shwedagon pagoda. It is now being electrified. A railway on the eastern side of the city is used for bringing the earth required for the reclamation of the low-lying swampy area near the banks of the river.

Administration.

Rangoon City consists of the municipality, the cantonment,

and the port. For the purposes of judicial and general administration it is a District of Lower Burma, in charge of a Deputy-Commissioner who is District magistrate, and who is assisted by a Cantonment magistrate, two subdivisional magistrates, and other officials. The Chief Court sits in Rangoon. It is a Court of Session for the trial of sessions cases in the city, and hears appeals from the District magistrate. There is a bench of honorary magistrates consisting of twenty-three members. On the civil side, the Chief Court disposes of original civil cases and of civil appeals. Petty civil cases are disposed of in the Small Cause Court, in which two judges sit. There is a good deal of crime in the city. The Indo-Burman community is addicted to theft, and acts of violence are not uncommon, while the proximity of the port appears to make the temptation to smuggle irresistible to certain classes.

The administration of the Rangoon Town Lands is at present conducted under the provisions of the Lower Burma Town and Village Lands Act of 1898. Since 1890 the Town Lands have been managed by a special Deputy-Commissioner, under the control of the Commissioner of Pegu and the Financial Commissioner. For revenue purposes the whole area comprising the Town Lands is divided into eight circles. The revenue collections in the District approximately average Rs. 31,900, the whole of which is credited to Imperial funds. The ground rents, together with premiums and the sale proceeds from lands and building sites, averaging in the past rather more than 3 lakhs, are credited to a special revenue head, from which a contribution of Rs. 1,85,000, diminishing each year by Rs. 25,000 till extinguished in 1908–9, is paid to the Rangoon municipality to be expended on works of utility. The balance is used to finance a scheme for reclaiming and laying out on sanitary lines the low-lying areas of the city. A few acres of rice land are assessed at Rs. 2 an acre, but other lands ordinarily pay a land revenue rate of Rs. 3 an acre. The revision of the rate is under consideration. Other sources of non-municipal revenue within city limits, besides customs and land rate, are excise and income tax. The former brought in about 14 lakhs and the latter (which has been in force in Rangoon since 1888) more than 6½ lakhs in 1903–4.

The Rangoon municipality covers an area of about 31 square miles, with a population in 1901 (inclusive of the residents of the port) of 221,160. It was constituted on July 31, 1874. The committee consists of 25 members, of whom 19 are elected by the ratepayers and 6 are nominated by Government. Various Municipality.

taxes are levied at a percentage on the annual value of lands and buildings within municipal limits: namely, the 8 per cent. tax for general purposes, the 7 per cent. scavenging tax, the 4 per cent. water tax, and the 1 per cent. lighting tax. The scavenging tax is charged at the rate of 4 per cent. in areas not served by the municipal drainage system. As elsewhere, market tolls are a fruitful source of municipal income in Rangoon.

During the years 1890–1900 the ordinary income of the municipality (excluding special loans) averaged 17 lakhs, and the ordinary expenditure 15 lakhs. In 1903–4 the ordinary income was 24 lakhs, the principal sources being 14 lakhs from rates, and 3 lakhs from markets and slaughter-houses. The gross income in 1903–4 was $46\frac{3}{4}$ lakhs, including a loan of 15 lakhs. The ordinary expenditure during that year was 21 lakhs, and the gross expenditure 55 lakhs. Of this total public works and conservancy absorbed $3\frac{1}{2}$ lakhs each, water-supply 23 lakhs, and hospitals and education about a lakh each.

The cantonment lies to the north of the city. It formerly comprised most of the European residential quarter, but building operations have now been extended outside its limits, mainly in the direction of what is known as the Royal Lake, an artificial stretch of water lying to the north-east of the city, and the cantonment boundary itself is now being curtailed. The population in 1901 was 13,721. There is a cantonment fund administered by the cantonment committee. Its income in 1903–4 was Rs. 84,000, derived largely from house and conservancy rates. The expenditure amounted to Rs. 82,000, devoted in the main to conservancy and police.

The city is at present lit with oil lamps, but electric lighting will probably be introduced at an early date.

Drainage and water-supply. The drainage system consists of gravitating sewers which receive the sewage from house connexions and carry it to ejectors. These discharge their contents automatically into a main sewer, through which all the night-soil and sullage water are forced into an outfall near the mouth of the river, immediately to the south-west of Monkey Point Battery to the east of the city. This system has been working since 1889 with most successful results. The water-supply for Rangoon has till recently been drawn from an artificial reservoir about 5 miles from the city, called the Victoria Lake, from which water is carried by a main pipe to the city and supplied at low pressure. Water is also pumped up to a high-level reservoir on the Shwedagon pagoda platform about 100 feet above Rangoon, whence it is supplied to the city by gravitation.

This arrangement has provided drinking water to the city for the past twenty years; but the supply having been found insufficient, a large reservoir lake has been constructed at Hlawga, about 10 miles beyond the Victoria Lake, which is calculated to supply all requirements for an indefinite period.

The city contains several handsome buildings. Among the most conspicuous are the new Government House to the north-west of the cantonment area, the Secretariat buildings to the east of the business quarter, and the District court buildings facing the river in the centre of the city. The new Roman Catholic cathedral, which is approaching completion, promises to be a very handsome structure. The Jubilee Hall, at a corner of the brigade parade ground in the neighbourhood of the cantonment, is one of the more recent additions to the architecture of the city. It is used for public meetings and for recreation purposes. The town hall in which the municipal offices are located adjoins the Sule pagoda in the business quarter. The Rangoon College, the General Hospital, and the Anglican cathedral are grouped together and merit notice. A new hospital, a Provincial Museum, new currency buildings, and a Chief Court are being constructed. There are several public squares and gardens, and a picturesque park (Dalhousie Park) surrounds the Royal Lake referred to above. Buildings.

Rangoon is garrisoned by British and native infantry and by two companies of artillery. There are three volunteer corps. Army and police.

Before June, 1899, the Rangoon police were under the orders of the Inspector-General of Police, but a Commissioner has now been appointed for Rangoon and the police placed directly under his charge. For police purposes the city is divided into three subdivisions, each in charge of a Superintendent. There are 10 police stations and 10 outposts. The total strength of the force under the orders of the Commissioner of Police and the Superintendents is 14 inspectors, 9 head constables, 57 sergeants, and 727 native constables, besides 17 European constables and one European sergeant.

Rangoon has a large Central jail with accommodation for 2,518 native and 80 European prisoners, in charge of a whole-time Superintendent, who is an officer of the Indian Medical Service. The principal industries carried on in it are carpentry, wood-carving, coach-building, weaving, wheat-grinding, and printing. A considerable portion of the printing work for Government is carried out by the jail branch of the Government Press. Jail.

Education. The following are the chief educational institutions in Rangoon: the Rangoon College and Collegiate School, established in 1874, administered by the Educational Syndicate from 1886, and placed in 1904 and 1902 respectively under the direct control of Government; the Diocesan Boys' School, founded in 1864, for the education of Europeans; the Baptist College, opened in 1872 as a secondary school, and in 1894 affiliated to the Calcutta University; St. John's College (S.P.G.), founded in 1864, and affiliated as a high school to the Calcutta University; St. John's Convent School for girls, started in 1861; the Lutheran Mission School for Tamil children, opened in 1878; and St. Paul's (Roman Catholic boys') school, opened in 1861.

In 1903-4 there were 27 secondary schools, 110 primary schools, 206 elementary (private) schools, and 19 training and special schools. The number of pupils in registered schools and in the two collegiate establishments was 8,031 in 1891, 13,514 in 1901, and 17,166 in 1903-4 (including 4,123 females). The expenditure on education in 1903-4 was borne as follows: Provincial funds, Rs. 90,700; municipal funds, Rs. 71,500; fees, Rs. 2,04,300; and subscriptions, Rs. 11,500.

Diseases. The chief epidemic and contagious diseases prevalent in the city are small-pox, cholera, and enteric fever. Small-pox appears to be introduced annually from the Districts, where it is always rife. Cholera is endemic along the banks of the river and creeks, and is, no doubt, closely related to an impure drinking-water supply. Enteric fever occurs sporadically throughout the city and suburbs. It is probably due to defective drainage and defective water-connexions. Since 1905 plague has been epidemic.

Medical. The most important medical institutions are the Rangoon General Hospital and the Dufferin Hospital, a new and handsome building recently erected in the north-west corner of the city. In connexion with the General Hospital, there are a contagious diseases hospital and an out-door dispensary at Pazundaung. A lunatic asylum is situated close to the Central jail, in charge of a commissioned medical officer, and a leper asylum is maintained outside the city.

[Capt. M. Lloyd, *District Gazetteer* (1868).]

Boundaries, configuration, and hill and river systems. **Hanthawaddy.**—District in the Pegu Division of Lower Burma, lying between 16° 19′ and 17° 47′ N. and 95° 45′ and 96° 45′ E., with an area of 3,023 square miles. It is bounded on the north by Tharrawaddy District; on the east by Pegu District; and on the west by Ma-ubin and Pyapon. The southern boundary stretches along the Gulf of Martaban

between the mouths of the Sittang and the To, or China Bakīr, rivers. In the centre and completely surrounded by it is the separate District of RANGOON CITY, in which the District offices are situated. The Cocos and Preparis Islands in the Bay of Bengal form part of the District.

Hanthawaddy is a vast deltaic plain stretching up from the sea, broken only by spurs of the Pegu Yoma, which separates the northern portion of the District from Pegu. The spurs continue as undulating ground through the Insein subdivision, and rise slightly near Rangoon, where the summit of a small hill has been levelled to form the platform of the Shwedagon pagoda. The range appears again on the opposite side of the Pegu river at Syriam, and is finally lost in the rocks in the Hmawwun stream just opposite the village of Kyauktan. A similar ridge of high land runs from Twante to Kungyangon in the west of the District. The highest point in the Yoma has an altitude of 2,000 feet. Here the hills are clothed with fine evergreen forests, and the scenery is bold and interesting. Farther south the high land is covered with fruit gardens and, near Rangoon, is being much sought after for house sites. Excluding this portion of the District, the scenery is tame and monotonous, and consists of rice cultivation and swamp relieved by scrub jungle, and along the sea-coast and the numerous water-ways by mangrove and inferior forest growth interspersed with *dani* plantations. The coast-line is low, and at the ebb shows large dismal stretches of mud.

The main stream is the Hlaing (known farther north as the Myitmakā), which enters the District at its northern end and runs southwards through its entire length. The Hlaing, which is navigable by native craft through the whole of its course within the limits of the District, is joined in the neighbourhood of Rangoon by the Pegu river and the Pazundaung stream from the north-east and north, and thence flows southwards under the name of the Rangoon river into the Gulf of Martaban. The District is further intersected by numerous tidal creeks, all navigable by country boats and many by river steamers. The most important of these are the Thatkutpin or Bassein creek, which connects the Rangoon river with the To, and thus with the main stream of the Irrawaddy; the Panhlaing, which during the rains, when the water is high, takes the place of the Bassein creek as the most direct route to the Irrawaddy; the Bawle river, which divides Hanthawaddy from the adjoining District of Ma-ubin; and the Hmawwun, which taps the rich rice-fields of the Kyauktan subdivision.

Geology. The plains of the delta are composed of homogeneous post-tertiary alluvium resting on a bed of water-worn gravel, which is often found at a depth of less than 250 feet and is a good water-bearing stratum. Along the skirts of the Pegu Yoma a broad bed of sandy deposit occurs; and laterite, which is largely used for road-metalling, is found in many of the lower hills, mixed with red alluvial clay. Occasionally partially rolled pieces of fossil wood are met with. The Yoma itself is formed of beds of the Pegu group, of Miocene age.

Botany. The coast-line is fringed with dense low mangrove jungle, covered regularly by the tide, and characterized specially by species of *Bruguiera* and *Rhizophora*. Behind these forests and along the borders of the tidal channels are the tidal forests, the most characteristic trees of which are *Sonneratia apetala* and *Avicennia tomentosa*. These forests average 40 to 50 feet in height, and have a thick shrubby growth, similar to that of the mangrove forests. *Nipa fruticans* and *Pandanus foetidus* form dense bushes, and *Phoenix paludosa* is very common. Creepers and climbers abound, including *Acanthus volubilis*, *Flagellaria indica*, &c. Behind this zone are either open evergreen tropical or low deciduous forests. Among the former are found *Parashorea stellata*, *Pentace burmannica*, *Albizzia lucida*, *Lagerstroemia tomentosa*, and *Dillenia parviflora*, and many varieties of shrubs and climbers. The low deciduous forests contain *Dillenia pulcherrima*, *Shorea leucobotrya*, *Pentacme siamensis*, *Melanorrhoea usitata*, *Xylia dolabriformis*, *Lagerstroemia macrocarpa*, *Albizzia lucida*, and *Strychnos Nux-vomica*. The undergrowth is usually composed of scanty andropogonous grasses. The savannah forests are distinguished by the great growth of elephant grasses, among which the trees grow up apart from one another; they include *Butea frondosa*, *Ficus fistulosa*, *Terminalia crenata*, *Dalbergia cultrata*, *Dalbergia purpurea*, *Lagerstroemia Flos Reginae*, and *Strychnos Nux-vomica*.

Fauna. In the Yoma, elephants, bison, *tsine* or *hsaing* (*Bos sondaicus*), and various kinds of deer are common; rhinoceros are rare. There are indications that tigers and leopards are increasing in consequence of the disarmament of the country, and their frequent appearance near Rangoon and the railway has lately caused annoyance. The fish-eating monkey and the short-nosed crocodile are at times seen along the tidal creeks.

Climate and temperature. The climate is moist and depressing, but on the whole not unhealthy. From the middle of March until the rains break in May the heat is excessive; and at the end of the rains, in

September and October, the nights are oppressive, and the days often muggy and trying. December and January are cool and pleasant, the average minimum being about 60°. The southern portion of the District is cooled by the sea-breeze, and the maximum temperature, which varies between 83° and 95°, increases in the north towards the drier zone of Tharrawaddy.

Rainfall.

The average annual rainfall at the recording stations is as follows: 94 inches at Insein, 98 inches at Rangoon, and 119 inches at Kyauktan. The rainy season lasts, as elsewhere, from May to October inclusive; a spell of two or three days' rain in early spring is not uncommon, and is a source of great inconvenience to the cultivators, whose grain at this time is usually on the unprotected threshing-floors.

Floods.

The country to the west of the Hlaing river is subject to inundation, especially in the north of the District. There were floods disastrous to cultivation in 1877, which have recurred in a smaller degree on several occasions. Abnormally high spring tides, when the wind is in the south, sometimes damage the rice-fields bordering the sea. The District is, however, safe from famine, as the water-supply, although poor in many places in the dry season, is seldom seriously deficient.

History and archaeology.

The name Hanthawaddy is derived from *hantha* or *hintha* (the Brāhmani goose) and *wadi*, Pālī for 'river.' Legend has it that in the south of the District in prehistoric days only the hill upon which the Shwedagon pagoda now stands was above sea-level, and that it once afforded a resting-place for a Gautama, who, in a previous incarnation, had been caught in the shape of a *hintha* in a storm in the neighbourhood of the eminence. In early historic days Hanthawaddy, like the rest of the country lying round the Gulf of Martaban, formed part of the kingdom of the Talaings. Shortly after the close of the sixteenth century, when the Talaings had for the time being been subjugated by the Burmans, and the Toungoo dynasty reigned in the old Talaing capital of Pegu, Syriam, in Hanthawaddy District, was one of the earliest European trading stations in Burma. The only remains of this early settlement which now exist are the fragments of the old city walls and the ruins of the church built outside the old town of Syriam in 1750 by the Vicar Apostolic of Ava and Pegu. These are now preserved by Government. Hanthawaddy passed, with the rest of the province of Pegu, under British dominion at the close of the second Burmese War. It was separated from Rangoon and made into a separate District in 1879. In 1883

it was split up into two on the creation of Pegu District, and in 1895 its limits were enlarged by the addition of the Kyauktan subdivision. With the expansion of Rangoon, various alterations of the boundary between the city and Hanthawaddy have been rendered necessary. The last revision was made in 1903.

There are several important pagodas. The Kyaikkauk pagoda is built on the low hills on the left bank of the Rangoon river 4 miles south of Syriam. It is said to have been erected to enshrine two hairs of Gautama; later, a bone of Gautama's forehead and one of his teeth were presented to the shrine. The Kyaikkasan pagoda lies about 3 miles north-east of the Shwedagon in Rangoon, and is of the same period as that at Kyaikkauk. The Shwesandaw, near Twante, is the most sacred of the local Talaing pagodas. It was built as a shrine for two of Gautama's hairs, to which four more hairs were subsequently added. Other sacred edifices of importance are the Kyaukwaing pagoda, 2 miles east of Thamaing railway station; and the Kyaikkalo pagoda, 14 miles north of Rangoon.

The people.

The population of the District at the last four enumerations was: (1872) 186,967, (1881) 296,026, (1891) 396,887, and (1901) 484,811. The distribution according to townships in 1901 is shown in the following table:—

Township.	Area in square miles.	Number of		Population in 1901.	Population per square mile.	Percentage of variation in population between 1891 and 1901.	Number of persons able to read and write.
		Towns.	Villages.				
Taikkyi	898	...	470	73,263	81	+ 52	20,385
Insein	482	1	478	103,984	216	+ 21	31,047
Twante	369	...	343	85,441	231	+ 24	26,026
Kungyangon	453	...	263	71,017	157	+ 12	23,447
Kyauktan	403	...	173	52,065	129	+ 33	19,300
Thabyegan	314	...	155	51,390	164	+ 1	32,755
Thongwa	104	...	174	47,651	458		
District total	3,023	1	2,056	484,811	160	+ 22	152,960

NOTE.—The Thongwa township was constituted after the Census of 1901.

Up to 1891 the rate of increase, chiefly owing to immigration from India, averaged about 100,000 for each decade. During the last decade progress has been rather slower, but there has been a total gain of 22 per cent. Hanthawaddy has now more inhabitants than any District in the Province, and is one of the most thickly populated. Despite its density it contains but one town (Insein) of over 5,000 inhabitants, and only five of

over 2,000. The population is thus almost wholly rural. There were 10,000 immigrants from India residing in the District in 1891 and 43,800 in 1901, three-fourths of whom were Madrasis. Buddhism is the religion of the great majority of the inhabitants; but after Rangoon City Hanthawaddy has the largest number of Hindus (39,500) of any District in the Province, and its aggregate of Musalmāns is lower only than those of Akyab, Rangoon, Amherst, and Mandalay. The Hindus are for the most part agricultural labourers and coolies from Madras. Burmese is the language ordinarily spoken. Practically all the persons returned as Karens at the enumeration speak the Karen language; but of the Shans only about half, and of the Talaings only a minute proportion, have retained their own vernacular. Of Indian languages Tamil and Telugu are the most widely spoken.

Race and occupation. The majority of the inhabitants are Burmans, but in 1901 the Karens numbered 44,100, the Talaings 32,700, and the Shans 15,400. The number of Chinese is large. Nearly 70 per cent. of the total population are engaged in or dependent on agriculture.

Christian missions. There are 7,440 Christians, nearly half of whom are Baptists, natives numbering 6,840. The Christian missions have their head-quarters in Rangoon; but there is an important branch of the American Baptist Mission at Insein, and several schools of this mission and of the Society for the Propagation of the Gospel are maintained in the large villages.

General agricultural conditions. The two southern subdivisions, Twante and Kyauktan, are practically deltaic islands, and, excluding a ridge known as the Kondan running from Syriam to Kyauktan, and a similar formation between Twante and Kungyangon, consist in the main of flat plains of alluvial soil in which the rice is ordinarily sown broadcast and not transplanted. The same may be said of the western portion of the Insein subdivision as far north as Hmawbi, beyond which the creeks lose their tidal character, and such streams as exist have separate sources in the Pegu Yoma. In this portion of the District the rice is almost always transplanted. In many places large tracts are subject to inundation, but the floods appear to be becoming less destructive and the precarious area more circumscribed.

The Kondan portion, although suitable for fruit cultivation on its lower slopes, is in the main covered with scrub jungle, and, beyond a small area in which the Shans cut *taungyas*, is of little value except for bamboo plantations. It is only on and near this high land, which cannot be used for rice, that

miscellaneous crops and garden produce are cultivated, although in the immediate vicinity of Rangoon the people are beginning to cultivate vegetables after the rice is reaped, by means of irrigation from unbricked wells. The rainfall, which may be roughly taken to average 100 inches per annum, is usually timely, and it is only in the extreme north of the District that partial damage to crops from unseasonable rainfall is in any way marked. There is, however, as has already been noted, an almost yearly loss of rice caused by rain in the early spring, when the cultivators, with their national carelessness, leave the grain unprotected on their threshing-floors.

Chief agricultural statistics and principal crops.

The best rice in Burma is said to come from Pyawbwe in the Twante subdivision, and from an agricultural point of view the District may be viewed as a huge paddy-field producing a better average yield than any other part of Burma. No other crop is of any general importance; but the fruit and vegetable gardens, which extend along the Kondan from Rangoon to Insein, and supply the Rangoon market with pineapples, mangoes, jack-fruit, marian plums, betel-nuts, and other fruits and vegetables, may be noticed. The area cultivated in 1891 was 1,473 square miles. The main agricultural statistics for 1903-4 are given below, in square miles:—

Township.	Total area.	Cultivated.	Forests.
Taikkyi	898	262	639
Insein	482	324	
Twante	369	272	
Kungyangon	453	267	
Kyauktan	403	237	
Thabyegan	314	225	
Thongwa	104	199	
Total	3,023	1,786	639

The area under garden crops in 1903-4 was 55 square miles, mostly in the Insein and Twante townships, while 3,000 acres were planted with the *dani* palm.

Improvements in agricultural practice.

The area under rice increases yearly; but good waste land is becoming exhausted except in the Taikkyi township, where large tracts to the east of the railway are still available for cultivation, and in the extreme south, where certain fuel reserves have lately been thrown open and island formations occur. The average size of a holding is large. At the revision settlement it was found to be over 40 acres. Comparatively little is done to improve the quality of the crops by systematic methods.

No applications have been recently made by the cultivators for loans under the Agriculturists' Loans Act, but advances under the Act have been made from time to time in the past.

Cattle, &c.

The agricultural stock is for the most part of the ordinary Burmese breed. Indian cattle imported from Calcutta are, however, becoming not uncommon. This is especially noticeable along the railway, where large settlements of natives of India are employed in supplying milk to Rangoon. Kine are more numerous than buffaloes. The area reserved for grazing purposes is 109,000 acres, and it is only where natives of India are breeding large herds of cattle for milking that any real difficulty in feeding the live-stock exists.

Irrigation and fisheries.

Beyond the ordinary system of field embankments and the garden cultivation effected by means of unbricked wells near Rangoon, there is no regular irrigation in Hanthawaddy. A large reservoir has recently been constructed at Hlawga, 15 miles north of Rangoon, from which the water-supply of that city is drawn, and there are many village tanks of local importance. The fisheries of the District lie for the most part on the west, towards the Irrawaddy delta; they are all either in the beds of streams or in shallow depressions filled by the overflow from the waterways. Of the former kind there are fifty-eight and of the latter forty-one. The largest fisheries are the East and West Gayetlami in the Twante township.

Forests.

The area of 'reserved' forest in 1904 was 394 square miles, and of unclassed forests about 245 square miles. The latter are rapidly diminishing, as cultivation extends and clearances are made by excessive cutting for fuel for Rangoon. The hill forests cover the western slopes of the Yoma, and include large tracts of evergreen forests, in which teak and *pyingado* (*Xylia dolabriformis*) are found. Past records extending back to 1857 show that these forests were once very rich in teak; but much of this valuable timber has been extracted, and they now compare unfavourably with the forests on the eastern slopes of the same range in Pegu District. The plain forests consist of non-tidal and tidal growths. The former extend from the foot of the Yoma on undulating land, and are almost wholly in the Insein subdivision. Characteristic trees are chiefly deciduous, but evergreen forest is found along some of the streams. In the moister localities *pyinma* (*Lagerstroemia Flos Reginae*) and *kanyinni* (*Dipterocarpus laevis*) are the principal trees, and elsewhere teak, *pyingado* (*Xylia dolabriformis*), and *in* (*Dipterocarpus tuberculatus*). The teak is usually of poor quality, and much of the *pyingado* was used

up for sleepers when the railway to Prome was being made. Large portions of the tidal forests have been reserved for fuel, but many rights in these Reserves exist, and they have been largely cut over. They are now not capable of supplying the demands of Rangoon, which must in future look to the plain forests in the Insein subdivision for the immense quantity of wood required for domestic purposes and brickmaking. There are 2,767 acres of teak plantations, dating from 1868. In 1900 a plantation of 30 acres of Para rubber trees was made near Rangoon, but its growth is not promising. The forest receipts in 1901 amounted to Rs. 71,155, including Rs. 35,799 from firewood and charcoal. In 1904 they were nearly Rs. 1,15,000.

Minerals.

Laterite and pottery clay are produced, but otherwise the mineral resources are unimportant. Laterite, which is largely used for road-metalling, is distributed along the Kondans, and is extracted by manual labour, Indian coolies being usually employed at a wage of 8 annas or more a day. The cost per 100 cubic feet delivered in Rangoon is Rs. 14, but the price varies with the cost of carriage. The annual out-turn is estimated at 22,000 tons. Ordinary alluvial clay is extensively excavated for brickmaking, and at Twante a superior kind is found, suitable for pottery.

Arts and manufactures.

Cotton-weaving on a small scale is carried on everywhere, but the people are gradually giving up their own hand-made cloth for European goods, which can now be bought in all the large villages. Silk-weaving as a local industry has almost entirely disappeared. Salt is manufactured at Tanmanaing in the Kungyangon township from sea-water, which is boiled in cauldrons after being passed over successive drying pans. The out-turn paying duty in 1903 was 46,600 cwt., which was almost entirely used locally in preserving fish in the shape of fish-paste (*ngapi*). Pots for salt-boiling are made in Kungyangon. At Twante large water and oil jars, often standing 4 feet high, and commonly known as Pegu jars, are made. They are glazed with a mixture of rice water and galena. Coarse mats used for packing are woven from bamboo in the Twante subdivision, and a finer kind for domestic use in parts of the Insein subdivision. Wood-chopping and other *das*, sickles, axes, and other iron-work for local use are made in many of the larger villages.

There are seven rice-mills in the District, almost all just outside Rangoon City, or within easy reach of it by water. Their annual out-turn is estimated at 64,000 tons, which all

goes to the Rangoon market for export. Near the Pugyi and Palon railway stations are two small saw-mills supplying the local market, and at Insein are the workshops of the Burma Railways Company, which employ 2,500 men. The Burma Oil Company's refinery at Syriam is the most important factory in the District, employing a staff of 22 Europeans and 3,150 natives. The crude oil is brought down in tank-steamer flats from Upper Burma, and is refined by the process known as continuous distillation. It is then stored in large steel tanks, and pumped through a 5-mile pipe-line to the tank-steamers belonging to the company in the Rangoon river. It is also shipped in smaller quantities in tins and casks.

Commerce and trade. The trade centres in Rangoon, but there are large markets at Twante, Thongwa, Paukkon, and elsewhere. Excluding teak and other forest produce, extracted under the supervision of Government, rice may be regarded as composing the entire export trade. The grain is bought up by brokers of the large Rangoon firms at local centres all over the District, and is brought to the mills by boat or rail. The use of large barges of European pattern, manned by natives of India, and often towed by small launches, is becoming general on the tidal creeks, and the number of Burmese craft in these waters is decreasing. Beyond this the only export trade is the daily supply of the Rangoon market with fuel, milk, fruit, vegetables, and a little live-stock, principally pigs. The greater part of the fuel is brought in logs by boat from the tidal forests, but a considerable amount of charcoal is manufactured in the Taikkyi township, and comes into Rangoon by rail. The principal imports are piece-goods, salt, oil, sugar, hardware, oilman's stores, gunny-bags, rope, and miscellaneous goods. These are all obtained from the Rangoon markets, and are retailed in the local bazars and shops by Burmese, Chinese, and Indian traders.

Communications. Within the District there are 70 miles of railway, nearly 200 miles of metalled roads, and 30 miles of fair-weather cart-roads. Of these the Rangoon-Prome trunk road, the Dala-Twante road, and some branch roads (in all, 109 miles) are maintained from Provincial funds, and the remainder from the District cess fund. The Insein subdivision is served by the Rangoon-Prome railway, which runs through it from south to north for a distance of 60 miles, and the south-east corner by the Rangoon-Mandalay line, which leaves the District 3 miles to the north of Togyaungale railway station. The main water-communications are the Hlaing river, which runs almost parallel

to the railway on the west, and has numerous tributaries, the TWANTE CANAL, and the Bawle, Panhlaing, and other creeks connecting the Hlaing with the eastern mouth of the Irrawaddy.

Except for the roads from Kyauktan to Syriam and Thabyegan, and from Twante to Dala and Kungyangon, the Twante and Kyauktan subdivisions depend almost entirely on water carriage. The Twante Canal shortens the distance by the Kanaungto creek between Rangoon and the To river, and, although shallow, is much used by small river steamers and boats, being the quickest route from Rangoon to the main stream of the Irrawaddy. A small drainage canal at Kayan, in the north of the Kyauktan subdivision, is navigable by boats in the rains. The Irrawaddy Flotilla Company has a daily service of steamers from Rangoon to Thongwa via Kyauktan, and from Rangoon to Twante through the canal. Launches run daily from Rangoon up the Pegu river to Kamamat, and down the Rangoon river to villages in the Kungyangon township. A regular service is maintained on the Hlaing, where, in the rains, launches ply as far north as Sanywe in Tharrawaddy District. A steam ferry plies several times daily between Syriam and Rangoon, and there are boat ferries on all the chief lines of communication.

District subdivisions and staff.

The District is divided into three subdivisions: Insein, comprising the TAIKKYI and INSEIN townships; Kyauktan, comprising the KYAUKTAN, THABYEGAN, and THONGWA townships; and Twante, comprising the TWANTE and KUNGYANGON townships. They are under the usual executive officers, assisted by 799 village headmen (361 of whom have no part in the collection of revenue), but there still remain twenty-three of the old revenue circles under circle *thugyis*. Of the headmen 7 have special criminal and 28 civil powers under the Village Act. The head-quarters are at Rangoon, where the Deputy-Commissioner is assisted by a treasury officer and an *akunwun* (in charge of the revenue). The land records staff consists of a superintendent, 8 inspectors, and 106 surveyors, the District being under supplementary survey. The excise staff is under a superintendent, subject to the control of the Deputy-Commissioner. The District forms a Public Works division, with three subdivisions conterminous with the civil subdivisions. It is likewise co-extensive with the Rangoon Forest division.

Civil justice and crime.

Hanthawaddy forms part of the Hanthawaddy Sessions division, and sessions cases are tried by the Divisional Judge. The District (civil) court is presided over by a whole-time

District Judge. One civil township judge tries the cases in the three township courts in the Kyauktan subdivision. The other townships each have a special civil township judge. The township judges at Insein, Kyauktan, and Twante exercise Small Cause Court jurisdiction within these three towns.

The criminal work is heavy; and two additional magistrates are employed, one (regularly) at Insein, and one (occasionally) at Kyauktan, to try cases during the open season, when the subdivisional and township officers (who ordinarily perform the magisterial work of their charges) are on tour. These officers have no territorial jurisdiction proper, but cases are transferred to them for trial by the District and subdivisional magistrates. The statistics of crime fluctuate year by year. Boat-robberies and dacoities were once very prevalent in the delta, but of late years these forms of crime have been less common, and house-breaking appears to have taken their place. Similarly, cattle-theft, for which Insein was once notorious, is now not particularly prevalent, although still far from extinct. The numerous waterways make smuggling easy, and offences against the opium and excise laws show little signs of falling off.

Revenue administration.

Numerous territorial changes in Hanthawaddy District make it exceedingly difficult to trace the growth of the revenue derived from land. The first regular settlement commenced in 1879–80, in what is now the Kyauktan subdivision, and was completed in 1884 with the settlement of a part of the Insein subdivision; but it was not until 1895, when the Kyauktan subdivision was transferred to Hanthawaddy, that the District as now constituted was formed. Since 1897 the settlement of all three subdivisions has been revised, and the present settlements will expire in 1910–11.

At the time of annexation the principal taxes (excluding customs collected at Rangoon) of Rangoon District were capitation, land (per yoke of oxen), fisheries, and salt taxes. These imposts were continued by the British Government, but at fixed rates per acre for land, the old assessment being quite arbitrary. Many grants under the liberal waste-land grant rules of 1865 have been made. Thirty-nine of these grants in different stages of assessment exist (from the minimum rate of 4 annas per acre to the maximum of Rs. 1–8 per acre when the land becomes permanently settled), covering an area of 37,346 acres. The largest of these are a grant of over 4,000 acres in the Twante circle, and the Tawkayan grant of 2,500 acres in the Kungyangon township. The Cocos and Preparis Islands are leased under special arrangements for the collection of coco-nuts and

fibre. The highest assessments on first-class rice land are Rs. 4–8 per acre in part of the Kungyangon township, Rs. 4–4 in certain portions of the Kyauktan subdivision, and Rs. 4 on land to the east of the railway in the Insein subdivision. On second-class soil the minimum rate is Rs. 1–4. The average assessment for rice land may be taken at about Rs. 3–8. Garden land is assessed at from Rs. 1–4 to Rs. 6–0 an acre. *Dani* pays Rs. 5 an acre, and betel-vine from Rs. 7–8 to Rs. 10.

Accurate statistics of revenue for the years prior to 1890–1 are not available. The following are the figures from 1890–1 onwards, in thousands of rupees:—

	1890–1.	1900–1.	1903–4.
Land revenue . .	9,82	30,12	34,29
Total revenue . .	14,51	39,60	47,88

The total revenue for 1903–4 includes 4·8 lakhs from capitation tax and 1·8 lakhs from fisheries.

Local funds. The District cess fund is administered by the Deputy-Commissioner for the construction and maintenance of roads and the provision of other local needs. It is provided mainly by a levy of 10 per cent. on the total land revenue; and in 1903–4 the income was Rs. 4,12,000 and the expenditure Rs. 4,41,000, mainly devoted to public works (Rs. 2,52,000). There are no municipalities. INSEIN was declared a 'notified area' in the early part of 1903, and a committee has been formed.

Lighthouses. There are three lighthouses in the District—the China Bakīr, Eastern Grove, and Table Island. The China Bakīr is an iron-framed structure, standing on the edge of the flats at the end of the China Bakīr or To river in 16° 17′ N. and 96° 11′ E. It was lighted originally in 1869, and was dismantled and erected in its present position on steel piles in 1901. The lighthouse shows a dioptric white light of the first order, fixed and flashing. The focal plane of the light is 74 feet above water-level. The Eastern Grove lighthouse stands on the east of the entrance to the Rangoon river, in 16° 30′ N. and 96′ 23° E. It shows an occulting dioptric white light of the third order, visible at 15 miles in clear weather. The focal plane of the light is 93 feet above high-water level. The structure is of iron, braced on screw piles. The lighthouse was first lighted in 1869 and was altered in 1881. The old light was converted into an occulting light and exhibited on May 9, 1896. The

Table Island lighthouse stands on the summit of the south-west end of Table Island, 2 miles from the Great Cocos Island, in 14° 11′ N. and 93° 21′ E. It shows a dioptric fixed white light of the first order, visible at 20 miles in clear weather. The focal plane of the light is 195 feet above high-water level. The structure is a cast-iron circular tower, painted with alternate red and white bands. The lighthouse was lighted in 1867. There is a signalling station (marked by an obelisk) at Elephant Point, west of the entrance to the Rangoon river.

The forts guarding the Rangoon river and some of the submarine defences are within the District; they are garrisoned from Rangoon. Insein is an important centre of the Burma Railways Volunteer Corps. **Army.**

The civil police force consists of 5 inspectors, 66 head constables and sergeants, and 426 men, under a District Superintendent, with 3 Assistant Superintendents stationed at Insein, Kyauktan, and Twante, the head-quarters of the 3 police and judicial subdivisions. There are 21 police stations, 9 of which are in the Insein, 5 in the Kyauktan, and 7 in the Twante subdivision. Three officers and 187 men of the Rangoon military police battalion are attached to the District. **Police and jails.**

The Central jail at Insein on the west of the railway is the largest prison in Burma, and has accommodation for 2,464 prisoners. It is in charge of a Superintendent, who has under him a staff of 2 Hospital Assistants, 12 jailors, and 67 warders. The principal jail manufactures are cotton-winding, carpentry and carving, cane and bamboo work, blanket and coir-making, and blacksmith's work. The articles produced are supplied to various Government departments, and may be purchased by the general public. The average jail population is 1,810 convicted and 21 under-trial prisoners. There is a reformatory school at Insein, which was moved there from Paungde in 1896, and now has accommodation for 200 boys. There were 82 boys in the school on January 1, 1904, who were employed in gardening, tin and cane-work, weaving, and carpentry. The staff consists of a superintendent, three school-masters, and two trade inspectors. The removal of this building is under consideration, as it is considered that its proximity to the jail is objectionable.

The standard of education is fairly high. The proportion of literate males in 1901 was over 48 per cent., and of females 11 per cent., the latter being higher than in any other District of the Province. For both sexes together the proportion is 32 per cent. In 1903–4 there were three special, 17 secondary, **Education.**

397 primary, and 382 elementary (private) schools, with 19,749 pupils (16,231 male and 3,518 female), as compared with 8,888 in 1890–1 and 19,092 in 1900–1. Higher education is largely dependent on the schools in Rangoon. The Burman schools show steady improvement, but the Karen seminaries, although increasing in numbers, remain of an inferior type. There has been a decrease in Tamil and other Indian schools. The only notable educational institution is the Government School of Engineering at Insein, which was established in 1894 to train Burmans for the Public Works department. Several scholarships are tenable in the school, and one appointment as overseer and five as sub-overseers in the Public Works department are presented annually by Government. There is a Survey school at Insein. The total expenditure on education in 1903–4 was Rs. 59,900, of which Rs. 16,800 was contributed from Provincial and Rs. 37,800 from the District cess fund. The receipts from fees amounted to Rs. 5,300.

Hospitals and dispensaries. Hanthawaddy is for medical purposes in charge of the Civil Surgeon, Rangoon, and the people of the District for the most part use the Rangoon hospital. There are, however, three other hospitals with 53 beds, in which 900 in-patients and 18,898 out-patients were treated in 1903, and 339 operations were performed. The income of the hospitals comes mostly from Local funds, which contributed Rs. 7,600 in 1903, while the railway gave Rs. 3,400 to the Insein hospital.

Vaccination. Vaccination is nowhere compulsory, and progress has been retarded by the popular practice of inoculation. In all 2,830 persons were successfully vaccinated in 1903–4, or only 6 per 1,000 of the population.

[Captain M. Lloyd, *Rangoon District Gazetteer* (1868); R. G. McKerron, *Settlement Reports* (1900, 1901, and 1902).]

Insein Subdivision.—Subdivision of Hanthawaddy District, Lower Burma, comprising the TAIKKYI and INSEIN townships.

Taikkyi.—Northern township of Hanthawaddy District, Lower Burma, lying between 17° 3′ and 17° 47′ N. and 95° 45′ and 96° 12′ E., with an area of 898 square miles. The population was 48,084 in 1891 and 73,263 in 1901, dwelling in 470 villages. The western portion of the township is low-lying and thickly populated; the eastern abuts on the Pegu Yoma, and has comparatively few inhabitants. The density is only 81 persons per square mile, as against the District average of 160. The proportion of Karens in the township is

high. The head-quarters are at the village of Taikkyi (population, 1,643), on the Rangoon-Prome railway, 41 miles from Rangoon. The area cultivated in 1903–4 was 262 square miles, paying Rs. 3,62,000 land revenue.

Insein Township.—Township in Hanthawaddy District, Lower Burma, lying between 16° 47′ and 17° 11′ N. and 95° 49′ and 96° 19′ E., with an area of 482 square miles. The population was 86,247 in 1891 and 103,984 in 1901. The township is level and fertile, and has a density of 216 persons per square mile. It contains one town, INSEIN (population, 5,350), the head-quarters, and 478 villages. The area cultivated in 1903–4 was 324 square miles, paying Rs. 6,14,000 land revenue.

Twante Subdivision.—Subdivision of Hanthawaddy District, Lower Burma, comprising the TWANTE and KUNGYANGON townships.

Twante Township.—Township in Hanthawaddy District, Lower Burma, lying between 16° 34′ and 16° 56′ N. and 95° 49′ and 96° 14′ E., with an area of 369 square miles. The population was 69,123 in 1891 and 85,441 in 1901. The head-quarters are at Twante (population, 4,684), at the western end of the Twante creek, which runs through the centre of the township and connects it with Rangoon. The township contains 343 villages. It is low-lying, fertile, and thickly populated, having a density of 231 persons per square mile. The area cultivated in 1903–4 was 272 square miles, paying Rs. 5,51,000 land revenue.

Kungyangon.—Southern township of Hanthawaddy District, Lower Burma, lying between 16° 19′ and 16° 40′ N. and 95° 50′ and 96° 20′ E., with an area of 453 square miles. The township is flat and fertile. It contains 263 villages. The population was 63,585 in 1891 and 71,017 in 1901. The head-quarters are at the village of Kungyangon (population, 2,789), on the Tàwpalwe stream, 5 miles from its mouth. The area cultivated in 1903–4 was 267 square miles, paying Rs. 5,25,000 land revenue.

Kyauktan Subdivision.—Subdivision of Hanthawaddy District, Lower Burma, comprising the KYAUKTAN, THONGWA, and THABYEGAN townships.

Kyauktan Township.—Township in Hanthawaddy District, Lower Burma, lying between 16° 30′ and 16° 48′ N. and 96° 11′ and 96° 37′ E., along the lower reaches of the Rangoon river and the Gulf of Martaban, with an area of 403 square miles. Except for one low laterite ridge, it is absolutely flat. The head-quarters are at the village of Kyauktan (popu-

lation, 2,653), pleasantly situated on the right bank of the Hmawwun stream, 5 miles from its junction with the Rangoon river. Syriam (population, 1,961), historically the most interesting town in the District, lies in the west of the township. The township, as at present constituted, had a population of 52,065 in 1901, and contained 173 villages. A portion of the former area has been incorporated in the new township of Thongwa. The area cultivated in 1903–4 was 237 square miles, paying Rs. 4,59,000 land revenue.

Thabyegan.—Township in the Hanthawaddy District of Lower Burma, lying between 16° 42′ and 16° 59′ N. and 96° 17′ and 96° 41′ E. Since 1901 its limits have been curtailed; and its area in 1903 was 314 square miles, and its population, according to the Census of 1901, 51,390, living in 155 villages. The head-quarters are at the village of Thabyegan (population, 1,320), on the Pagandaung creek, about 2 miles from where that stream flows into the Pegu river. The area cultivated in 1903–4 was 225 square miles, paying Rs. 4,37,000 land revenue.

Thongwa Township.—South-eastern township of Hanthawaddy District, Lower Burma, wholly level throughout, situated immediately to the west of where the Sittang flows into the Gulf of Martaban. It lies between 16° 39′ and 16° 58′ N. and 96° 23′ and 96° 45′ E., and has an aréa of 104 square miles. It was constituted in 1901–2, being formed of portions of the Thabyegan and Kyauktan townships, which in 1901 had a population of 47,651. It contains 174 villages. The head-quarters are at the village of Thongwa (population, 3,132), on the Hmawwun creek, about 25 miles from the point where that stream flows into the Rangoon river. The area cultivated in 1903–4 was 199 square miles, paying Rs. 4,82,000 land revenue.

Insein Town.—Head-quarters of the subdivision and township of the same name in Hanthawaddy District, Lower Burma, situated in 16° 53′ N. and 96° 8′ E., 10 miles north-west of Rangoon city. Population (1901), 5,350. Insein is an important railway centre, containing the principal workshops of the Burma Railways Company. It has the largest jail in the Province, an engineering school, and a reformatory school. There is a frequent local train service to and from Rangoon, and, as a good deal of high land is suitable for building sites, Insein is becoming a popular residential suburb of the capital. The town was constituted a 'notified area' in 1903, and is administered by a committee of five members. The income of the town fund in 1904–5 amounted to Rs. 13,600, and the expenditure to Rs. 7,200.

Tharrawaddy District.—District in the Pegu Division of Lower Burma, lying between 17° 31′ and 18° 47′ N. and 95° 15′ and 96° 10′ E., with an area of 2,851 square miles. It is bounded on the north by Prome District; on the east by the Pegu Yoma; on the south by Hanthawaddy District; and on the west by the Irrawaddy river, which, running in a south-easterly and southerly direction, separates it from Henzada District. It consists chiefly of alluvial plains of a flat and uninteresting character. On the western border near the river there is a good deal of marsh land; on the east the hills of the Pegu Yoma, dividing it from Pegu District, reach an altitude of about 2,000 feet. This eastern range forms the parting between the Irrawaddy and Sittang rivers, and is thickly covered with forests. The Irrawaddy skirts the District for 46 miles on the western border. The only other river of importance is the Myitmakā, which, rising in a lake known as the Inma in the south of Prome District, and fed by streams from the Pegu Yoma in the east, runs southward for 53 miles, entering Hanthawaddy District at Myitkyo, where it becomes the Hlaing, and finally flows into the sea as the Rangoon river. The Myitmakā is important as forming the channel of the timber trade of the District. The watershed between the Myitmakā and the Irrawaddy is low and indistinct. Boundaries, configuration, and hill and river systems.

The soil of the low-lying portion is alluvial, and its geological history is no doubt a history of the two rivers which drain it. The main geological features of the PEGU YOMA have been described in the separate article on the range. None of the hills can be assigned to an era earlier than the Miocene or Middle Tertiary. Though low in altitude, the Pegu Yoma is steep and difficult to cross, owing to the heavy rainfall which tends to wash away the top soil. A curiosity of this range is the natural granite bridge called Kyauktadā, or 'stone bridge,' which stretches for a length of 560 feet over a chasm, and is quite bare of all vegetation. Geology.

There are no mangrove or tidal forests in the District. True evergreen forests are practically unknown, so that the constituents of the vegetation fall under varieties of deciduous forests (described under PEGU DISTRICT) and savannah forests bordering the Irrawaddy (described under HANTHAWADDY DISTRICT). Botany.

Among the wild animals found are elephants, tigers, leopards, rhinoceros, bison, *tsine* or *hsaing* (*Bos sondaicus*), *thamin* or brow-antlered deer, bears, and feathered game such as peafowl, pheasant, partridge, snipe, duck, &c. Fauna.

The climate is comparatively mild and damp, though in the Climate,

temperature, and rainfall.

plains in April, which is the hottest month, the thermometer rises at times to 103° in the shade. Rain generally falls at the latter end of this month, though it cannot be relied on till May, when the heat is certain to be allayed by thunder showers, the precursors of the monsoon, which begins about the first week in June and continues with little interruption till October. During the latter month the showers become scantier, and gradually cease altogether till the following May, except perhaps for a slight fall about Christmas. The average annual rainfall for six years at the principal recording stations is given below in order of latitude, from south to north: Tharrawaddy, 79 inches; Monyo, 64 inches; Okpo, 61 inches; Gyobingauk, 60 inches; Zīgon, 58 inches; Tapun, 49 inches; and Nattalin, 57 inches. It will be noted that there is a well-marked decrease northwards, and the protective influence of the Arakan Yoma in the west makes itself more and more felt. The rainfall is on the whole reliable, and serious scarcity is unknown. The riverain portion of the District is subject to floods from freshes in the Irrawaddy, but these are never of a really serious character.

History and archaeology.

In the eighteenth century Tharrawaddy was the name for a considerable tract of country lying between the Irrawaddy and the Pegu Yoma, of which the present District now forms a part. When the Pegu province was annexed after the second Burmese War, Tharrawaddy and what is now Henzada District formed a single District called Tharrawaw, and the history of Henzada and Tharrawaddy is identical up to the year 1878. Previous to annexation Tharrawaddy had been a portion of the Talaing kingdom of Pegu, which was added to the Burmese empire by Alaungpayā in 1753. Apart from this it has no special history: it seems never to have had any independent political existence, and the inhabitants would appear to have taken no prominent part in the wars between the Burmans and the Peguans. At the beginning of the nineteenth century Tharrawaddy became an apanage of a scion of the royal house, who subsequently became infamous under the title of Prince Tharrawaddy. Clever and open-hearted, but ambitious and cruel, this lordling turned his grant into a nest of robbers, of whom he made use in 1837 to dethrone his brother Bagyidaw. Tharrawaddy has long been notorious for the ill repute of its inhabitants, and there can be no question that this criminal taint is largely a legacy from the myrmidons of this aristocratic ne'er-do-weel. During the first Burmese War no resistance was offered to the advance by river of Sir Archi-

bald Campbell. In the second war, after the annexation of the province of Pegu (including Tharrawaddy District), the line of such resistance as there was appears to have followed the western bank of the river. The chief source of disturbance in these parts was the disbanding of the Burman police, of which force each *thugyi* controlled several hundreds. Deprived of occupation by the conquest of the province, and encouraged and led by men holding commissions from the Court at Ava, these *ex*-police kept the whole country south of the Akauktaung in a ferment. In Tharrawaddy a man named Gaung Gyi was the leader. A hereditary *thugyi* of a small circle, he had been deposed by the Burmese government for refusal to pay his quota of tax, and a relative of his was appointed in his stead. This relative he expelled at the breaking out of war, and, being secretly supported by the Burmese Court, he was able to establish something like a reign of terror in the District. It was not till 1855 that, by the united exertions of Captains D'Oyley and David Brown, he was forced to fly into Burmese territory. The District has had various head-quarters: Tharrawaddy, Henzada, Myanaung, and Henzada in succession. In 1878 the present District was formed with its existing head-quarters, a cluster of official buildings surrounded by paddy-fields, without any recommendations, either political, commercial, or geographical. There are no important pagodas, and what archaeological remains there are have hitherto received but little attention.

The population has increased from 171,202 in 1872 to 272,001 in 1881, 339,240 in 1891, and 395,570 in 1901. Its distribution in 1901 is shown in the following table:— The people.

Township.	Area in square miles.	Number of Towns.	Number of Villages.	Population in 1901.	Population per square mile.	Percentage of variation in population between 1891 and 1901.	Number of persons able to read and write.
Tharrawaddy	391	1	228	53,940	138	+ 29	30,013
Letpadan	526	1	213	56,098	107		
Minhla	627	1	468	86,939	139	+ 16	24,846
Monyo	182	...	172	39,964	219	+ 15	11,655
Gyobingauk	431	2	411	91,040	211	+ 8	25,862
Tapun	694	...	327	67,589	97	+ 12	16,985
District total	2,851	5	1,819	395,570	139	+ 17	109,361

NOTE.—The Tharrawaddy township was formed after the Census of 1901.

Like Henzada and Prome, Tharrawaddy would seem to have exhausted its attractions for immigrants, for the increase during

the past decade has been small. It remains to be seen whether the new railway to Henzada and Bassein, a portion of which passes through it, will accelerate the increase in the future. After Ma-ubin, Henzada, Hanthawaddy, and Sagaing, however, Tharrawaddy is still the most thickly populated District in Burma, with a density of 139 persons to the square mile. The five towns are LETPADAN, GYOBINGAUK, THONZE, ZĪGON, and MINHLA. The first three are municipalities, and have grown largely within recent years, the railway being responsible for the rise in each case. The majority of the population (378,600) are Buddhists. Compared with the adjoining Districts of Pegu and Hanthawaddy, the total of Musalmāns (3,100) and Hindus (8,500) is small. It is higher, however, than in Prome, its neighbour to the north, and the foreign element is strong enough to keep the number of females below that of males. Burmese speakers in 1901 numbered nearly 358,000, and Karen was spoken by nearly 21,000 persons.

Race and occupation.

Burmese form the greater proportion of the population (355,500). Karens are numerous (21,200), and there is a fair sprinkling of Shans. On the other hand, the District, unlike Hanthawaddy and Pegu, shows very few Talaings. The return of castes shows that railway construction must have been responsible for the presence of a large number of the Hindus enumerated at the Census of 1901. Tharrawaddy has a large agrarian community. In 1901, 301,710 persons, or 76 per cent. of the population, were returned as dependent, either as actual workers or otherwise, on agriculture. Only 9,100 persons were supported by *taungya* cultivation.

Christian missions.

The number of Christians (4,301) is fairly large. Of this total, 4,138 are natives. Missions have been established by the Roman Catholics at Thonze and Gyobingauk, and by the American Baptists at Tharrawaddy, Thonze, and Zīgon. More progress is made by the missionaries among the Karens than among the Burmans.

General agricultural conditions.

The soil of Tharrawaddy is extremely fertile, and with the abundant rainfall usually received, requires little manure and no irrigation, except on the high banks of creeks, where primitive wheels are used to raise water for crops of betel-vine, vegetables, maize, &c. The cultivated portion falls naturally into several tracts: the country bordering the hills, where cultivation is sparse, but on the increase; the great central paddy plain, which stretches east of the Myitmakā stream; and the submerged tract between that river and the Irrawaddy, where the soil is a rich clay, but where continual floods are

liable to destroy the crops. Taking rainfall as a basis for further differentiation, the six most northerly circles of the District may be classified together as a fourth natural tract. They receive only about two-thirds the amount of rain that falls in the circle of Thonze, and are, moreover, farther from their market. Thus their produce and profits are diminished at the same time, and economically they stand on a footing different from the rest of the District.

There is nothing distinctive or peculiar in the methods of cultivation in the plains. Rice is grown in the usual way, by transplantation. In the submerged tract certain lands are flooded when the river rises, and rice cannot be transplanted till late in September. These lands are known as *tāze*, and, notwithstanding the late transplantation, their yield is double that of adjacent unflooded land. In the hills *taungya* or hill-slope cultivation is resorted to, while garden and orchard produce is very successful along the banks of the streams.

The holdings are mostly small, and the cultivators fall under the class of peasant proprietors. There is no distinct landlord class: the husbandman ordinarily works his own land, and if that is not sufficient to employ him rents another piece from his neighbour.

Chief agricultural statistics and principal crops.

The following table exhibits, in square miles, the main agricultural statistics for 1903-4:—

Township.	Total area.	Cultivated.	Forests.
Tharrawaddy	391	97	1,349
Letpadan	526	112	
Minhla	627	177	
Monyo	182	55	
Gyobingauk	431	189	
Tapun	694	97	
Total	2,851	727	1,349

The principal crops in the order of their importance are rice, orchard and garden produce, peas, tobacco, and miscellaneous food-crops, including vegetables, sesamum, sugar-cane, and maize. The cultivated area was 555 square miles in 1891 and 685 square miles in 1901. Garden cultivation occupied 20 square miles of the total in 1903-4, and rice 687 square miles, the principal kinds being *kaukkyi*, *kaukngc*, *kaukhnyin*, and *ngakyauk*, all harvested during the cold season. *Kaukkyi* furnishes the best table rice; it is, however, more liable to damage from floods and drought than any other kind, and the

price is generally Rs. 10 per 100 local baskets higher than for ordinary rice. *Kaukkge* has a shorter seed than *kaukkyi*, but includes many kinds. It is the rice referred to in market quotations. *Kaukhnyin* is a long glutinous rice which is not boiled but steamed, and forms the morning meal of the agricultural classes. It is also much used for making *seinye* or rice beer. Vegetables include sweet potatoes, brinjāls, and tomatoes. The usual fruits of Lower Burma are grown in the orchards, such as mangoes, jack-fruit, plantains, pineapples, marian plums, coco-nuts, and guavas. The greater part of these orchards are situated in the Tapun and Gyobingauk townships. The cultivation of all crops is on the increase, except in the case of sesamum, the growth of which has been discouraged of late by frequent floods. There has been an increase in sugar-cane, which may be accounted for by the fact that new grants are planted with this crop before the soil is ready to go under the plough for rice cultivation. The extension in the area under rice may be attributed to the opening of the new railway line to the Irrawaddy, and to local causes such as the construction of the Paukkon-Aingtalok embankment, and the absence in late years of high floods in the Bilin and Shwelaung circles. About 4,700 acres of tobacco are grown on the alluvial soil near the Irrawaddy.

Improvements in agricultural practice.

There has been no improvement either in quality by selection of seed, or in kind by the introduction of new varieties. Havana tobacco seeds are distributed by Government, but have attained no success hitherto. The Land Improvement and Agriculturists' Loans Acts appear to be appreciated by the cultivators, for the annual advances vary from Rs. 13,000 to Rs. 23,000. Advances are most popular in the townships of Gyobingauk and Tapun.

Cattle, &c.

Horned cattle, including bullocks and buffaloes, present no special peculiarities of breed, but the latter are more used for ploughing than the former. Ponies are fairly plentiful, but the climate is not very suitable for horseflesh. Two Government stallions are, however, kept at the head-quarters of the District. Goats are bred to a small extent. Fodder is plentiful, and from December to June cattle are allowed to wander freely over the country; it is only in September, when the young rice plants are being transplanted, that grazing-grounds are really needed. There are 437 of these, covering an area of 48,110 acres.

Irrigation and fisheries.

There is no artificial irrigation; tanks and wells are used solely for storing drinking water for man and beast, the largest reservoir being that at Gyobingauk. Artesian wells are in

contemplation at several places; in fact, one or two have already been sunk, but they are not yet in working order. The District contains a number of inland fisheries, both along the Irrawaddy and in the basin of the Myitmakā. That yielding the largest revenue is known as the Tanbingyaung fishery in the Letpadan township; that covering the largest area is at Pangabin in the Monyo township. Practically the whole of the fish-supply is consumed locally. The fishing industry is profitable, but is not susceptible of much development.

Three chief types of forest may be distinguished. The first of these is the forest of the Pegu Yoma. This great mass of woodland, in which teak of the best quality is found in the greatest abundance, lies on the western slopes of the Pegu Yoma. Here the forests are of the upper mixed deciduous type, in which teak is found associated with *Xylia dolabriformis* (*pyingado*), *Bombax insigne*, *Lagerstroemia Flos Reginae*, *Homalium tomentosum*, and many other species. Cutch is plentiful in the northern parts of the District, where the rainfall is lighter than in the south. Bamboos of many kinds form a characteristic feature of these forests. The second main type of forest is known as *indaing*. The Yoma forests are frequently skirted by a stretch of *indaing*, on laterite soil, the chief timber tree present being *in* (*Dipterocarpus tuberculatus*), which is associated with *ingyin* (*Pentacme siamensis*), *Melanorrhoea usitata*, *Strychnos Nux-vomica*, &c. The third main type may be denominated the plain forests. These are situated on the alluvial plains, which are more or less inundated with water during the rains. Teak is not always found in them, and when present is usually of inferior quality. The District contains 736 square miles of 'reserved' forests, and 613 of unclassed. Regular working plans are in force for 698 square miles of Reserves. There are 494 acres of regular plantations, and 19,362 of *taungya*; these are chiefly of teak. The Myitmakā is the main timber-rafting river of the District. Sanywe, a village on the banks of this stream, is the dépôt where the teak and other timber destined for Rangoon is measured and passed. The total revenue from the forests of Tharrawaddy for the year 1903-4 was 13·5 lakhs. **Forests.**

A forest school was opened in 1899 in Tharrawaddy, at which Burman Forest subordinates are trained in their duties. The course lasts two years, and the number of students admitted annually is twelve. Though intended primarily for Government servants, private students are allowed to enter the school. The divisional Forest officer is director of the school,

and there is a teaching staff of one European and two Burman instructors.

Minerals. Minerals of value have never been discovered, but pottery clay and laterite are found, as they are almost everywhere in Lower Burma. Both are worked under a licence from the Government; but the business of extraction is taken up as a subsidiary occupation in the dry season, and not as a special means of livelihood.

Arts and manufactures. Cotton-weaving is carried on in almost every large village in the Zīgon subdivision, but the industry is declining owing to the introduction of cheap clothing materials of foreign manufacture imported from Rangoon. Even at the existing looms, where rough *pasos*, *longyis*, and blankets are the chief articles produced, imported twist and yarn are used instead of home-spun cotton. The produce of these looms is confined to the requirements of the family. Occasionally, however, cotton dusters in fancy check are exhibited for sale in the markets, but not in any large quantity. Gold- and silversmiths are plentiful, who turn out rings, necklaces, *nagats*, *nadaungs*, bangles, anklets, bowls, and betel-boxes in the precious metals; their handiwork is not, however, thought equal to that of their brethren in Prome. Iron and pottery are worked, but only for domestic purposes. The latter industry is suffering, it is said, from the competition of foreign-made metal cooking pots. Mat-weaving is carried on, the material used being chiefly bamboo, though the more expensive *thinbyu* mats, prized for their softness and flexibility, are sometimes woven; bamboo matting for the walls of huts is also manufactured, but is being driven out by corrugated iron. The use of sewing machines is becoming common in all the principal towns. There are five steam saw-mills in the District, each of which employs between thirty and forty hands.

Commerce and trade. Rangoon is the natural market for such of the produce as is exported, including paddy, timber, and vegetables. The chief imports are European goods of all sorts, wearing apparel, piece-goods (cotton and silk), besides dried fish and oil and salt from the neighbouring Districts. The channels of trade are the railway, and the Irrawaddy and Myitmakā rivers. The transport of timber and bamboo follows the waterways chiefly, but an enormous amount of paddy is taken down by the railway in the season. Boat traffic is, however, a much cheaper means of transport than rail, partly because the rolling-stock of the railway is unable to cope with the volume of paddy traffic, and partly because the boat-owner does not have to pay demurrage

if the rate current on his arrival at the market does not happen to suit him. Trading is not confined to one class or one nationality; practically all members of the community engage in it, to some extent at any rate. Brokers and money-lenders figure largely in all business transactions. The larger brokers get advances from Rangoon firms on mortgage security, and buy paddy on a fixed commission; the lesser men get smaller contracts from them and smaller commission. Others again only introduce sellers to the brokers. It is not uncommon for one man to combine several businesses and to have several partners. Such combination, further complicated by a defective system of account-keeping, is a frequent cause of litigation. Timber is worked by contracts under the Forest department. The actual and nominal contractor is generally financed by some sleeping partner, who takes little or no active part in the extraction of the logs. Considerable fortunes are amassed by judicious investment; and a rich man in this District may, in most cases, safely be presumed to have made his money by paddy or timber trading, or from lawsuits arising out of dealings in connexion with one or other of these commodities.

Communications.

The District is crossed by 61 miles of the railway from Rangoon to Prome, with 13 stations on this portion of the line. A branch line of 26 miles has recently been opened from Letpadan westwards to Tharrawaw on the Irrawaddy, opposite Henzada, being part of an extension to Bassein. The main line connects all the most important trade centres in the District: namely, Zīgon, Gyobingauk, Minhla, Letpadan, and Thonze. About 211 miles of metalled roads are maintained, of which 161 are kept up from Provincial funds. The chief of these is the Rangoon-Prome road, mile 70 to mile 139, and various loops and diversions from this thoroughfare, e. g. from Zīgon to Tapun and Gyobingauk, and from Minhla to Letpadan. The 50 miles of metalled roads kept up by Local funds are principally town roads and footpaths. There are 19 miles of unmetalled roads, of which 15 miles (from Sanywe to Thayetchaung) are provided for from Provincial, and the remainder from Local funds. The chief means of communication by water is the Irrawaddy river, navigated by the Irrawaddy Flotilla Company's steamers, and the Myitmakā with its tributary creeks, which are capable of carrying boats with a load of several hundred bags of rice in the wet season as far as the railway line, but are practically dry from November to May. A steam ferry plies between Tharrawaw and Henzada, connecting the two sections of the new railway. There are also

seventeen boat ferries on the Myitmakā river, two on the Kantha creek, and one on the Irrawaddy.

District subdivisions and staff.

Tharrawaddy District is divided into two subdivisions. The northern, Zīgon, comprises three townships: GYOBINGAUK, TAPUN, and MONYO. The southern, Tharrawaddy, also comprises three: THARRAWADDY, LETPADAN, and MINHLA. With the exception of Tapun and Monyo, all these townships have their head-quarters on the railway. They are in the charge of Burmese magistrates, who are responsible for the preservation of order and the collection of revenue.

At head-quarters are a treasury officer and an *akunwun* (in subordinate charge of the revenue administration of the District), and a superintendent of land records with a staff of 4 inspectors and 45 surveyors. The District forms (with Prome) the Tharrawaddy Public Works division, being divided into two subdivisions, Tharrawaddy and Letpadan. It also forms the Tharrawaddy Forest division, with two subdivisional officers at Zīgon and Tharrawaddy.

Civil justice and crime.

Civil judicial work is disposed of by nine regular courts: the District court, the subdivisional courts at Tharrawaddy and Zīgon, and the six township courts. All business in the District court is transacted by the District Judge, who divides his time between Tharrawaddy and the adjoining District of Prome. Special township judges do the civil work in all the townships except Monyo. There are 681 village headmen, of whom 29 have received special civil powers, and dispose of about ten cases each annually.

The criminal work is divided between the District, subdivisional, and township magistrates and the Divisional and Sessions Judge of Prome, who visits Tharrawaddy about once in two months to try such cases as are committed to him. There are eighteen headmen with special criminal powers. Tharrawaddy has long had a bad reputation for the more serious forms of crime, especially dacoity, robbery, and cattle-theft. These, however, have considerably declined, and the most serious crimes now prevailing are murder and grievous hurt, especially by stabbing; in almost every case the use of intoxicating liquors is found to be the exciting cause. The decline of cattle-theft and violent crimes affecting property is due to the stringent enforcement of the Village Act and the energy of the police. The civil work calls for no special comment except with regard to its steadily increasing volume.

Revenue administration.

Before the annexation of Pegu the land revenue of Tharrawaddy was insignificant in comparison with that of the adjacent

District of Henzada, the receipts from the tax on plough oxen or rice land being only Rs. 970, compared with Rs. 76,440 collected in the last-named District. The past fifty years have bridged over this marked difference. The first revenue settlement was undertaken more than forty years ago, when the rates varied from R. 1 to Rs. 2 per acre. By 1880, the area cultivated and the land revenue had doubled; and in that year a summary increase of 4 annas per acre was made on all land except in the tracts remote from the railway. Between 1880 and 1884 a detailed settlement was effected. The rates then proposed, which varied from Rs. 2-4-0 to 12 annas per acre on rice land, came into force in 1884-5. The assessment was revised in 1900-2. The present rates vary from Rs. 3-4-0 to R. 1 per acre of rice land; garden land pays from Rs. 2 to Rs. 2-8-0; and sugar-cane grown as a *ya* crop, Rs. 4 per acre. The average extent of a holding is 11 acres. The system of collection was originally through the medium of circle *thugyis*, of whom there were at one time 61. The jurisdictions of these officials were often unduly large; but the remuneration of a 10 per cent. commission attracted a class of men with a good education and a knowledge of surveying, superior in every way to the village headman, or *ywathugyi*, who not infrequently collected the revenue for the circle (or *taik*) *thugyi*, but drew no commission. The system of collection by village headmen is now being introduced as circles fall vacant. At present there are seventeen circles in which there are circle *thugyis*, who draw full commission, while fourteen circles have recently been broken up, and the revenue in them is now collected by 338 village headmen

The following table shows, in thousands of rupees, the growth of the revenue since 1880-1:

	1880-1.	1890-1.	1900-1.	1903-4.
Land revenue . .	3,50	5,70	8,50	11,22
Total revenue . .	8,70	9,90	15,98	23,27

The total revenue for 1903-4 includes Rs. 3,77,000 from capitation tax and Rs. 5,17,000 from excise.

Local and municipal government.

There is a District cess fund maintained chiefly by a levy of 10 per cent. on the total land revenue, and administered by the Deputy-Commissioner for the up-keep of roads and the provision of other local necessities. Its income in 1903-4 was Rs. 1,60,700, and of this total Rs. 63,000 was spent on public works.

There are three municipalities, THONZE, LETPADAN, and GYOBINGAUK; and two town committees, ZĪGON and MINHLA.

Police and jails. The police are under a District Superintendent, who has two subdivisional officers with jurisdictions corresponding to the civil subdivisions. The strength of the civil police force has been recently considerably augmented, and now consists of the following: 4 inspectors, 3 chief head constables, 9 head constables, 43 sergeants, and 406 constables. There are 11 police stations and 4 police outposts in the District. Military police are stationed at Letpadan, Minhla, Monyo, Gyobingauk, Zīgon, and Tapun, and also at the District head-quarters. There are no jails or reformatories, convicted prisoners being sent to the Rangoon and Insein jails to serve out their sentences. There is, however, a lock-up for the temporary detention of prisoners at the District head-quarters.

Education. The standard of education is high even for Burma. Although the proportion of literate males, 48·4 per cent., does not exceed that of the illiterate, as it does in a few of the Upper Burma Districts, it is higher than in any other District of Lower Burma except Thayetmyo. For males and females together the proportion is 27·6 per cent. Education is chiefly in the hands of religious bodies, Buddhist monks, French Roman Catholic priests, and American Baptist missionaries. The number of pupils was 2,615 in 1881, 5,646 in 1891, and 9,421 in 1901. In 1903–4 there were 21 secondary, 146 primary, 130 elementary (private), and 3 special schools, attended by 10,470 pupils (1,870 females). The expenditure on education was Rs. 52,300; of which Rs. 23,800 came from the District cess fund, Rs. 7,300 from municipal funds, and Rs. 6,800 from Provincial funds. The fees amounted to Rs. 14,200. Educational progress has been steady during the past five years. Secondary education has declined in the Letpadan and Gyobingauk townships, but has increased in Minhla and Monyo. The growth in the popularity of education is much more marked in primary than in secondary schools, the latter remaining stationary, while the former have increased by nearly 15 per cent. since 1900. Female education has increased by 52 per cent. in the same period.

Hospitals and dispensaries. The District possesses 8 hospitals, containing 96 beds, as well as 2 railway dispensaries. In 1903 the number of cases treated was 68,748, of whom 1,770 were in-patients, and 1,058 operations were performed. The hospitals are maintained almost entirely from Local (town and municipal) funds, the expenditure on them amounting to Rs. 29,000 in 1903.

Vaccination is compulsory only in the three municipalities. In 1903-4, 11,428 persons were successfully vaccinated in the urban and rural areas, representing 29 per 1,000 of population. Vaccination.

[E. A. Moore, *Settlement Reports* (1902 and 1903).]

Tharrawaddy Subdivision.—Southern subdivision of Tharrawaddy District, Lower Burma, comprising the THARRAWADDY, LETPADAN, and MINHLA townships, with head-quarters at Tharrawaddy town.

Tharrawaddy Township.—Southern township of Tharrawaddy District, Lower Burma, lying between 17° 31′ and 17° 58′ N. and 95° 33′ and 96° 5′ E., with an area of 391 square miles. In 1901 it formed part of the Letpadan township. The population in 1901 of the area separated was 53,940, distributed in 228 villages and one town, THONZE (population, 6,578). The head-quarters are at THARRAWADDY. The township is level throughout, except in the east, where it abuts on the Pegu Yoma. There were 97 square miles cultivated in 1903-4, paying Rs. 2,13,000 land revenue.

Letpadan Township.—Township of Tharrawaddy District, Lower Burma, lying between 17° 37′ and 18° 10′ N. and 95° 26′ and 96° 10′ E., with an area of 526 square miles. The population in 1901 was 56,098. The eastern portion of the township on the Pegu Yoma is hilly, the western is level and fertile. The head-quarters are at LETPADAN TOWN (population, 8,772), and there are 213 villages. The area cultivated in 1903-4 was 112 square miles, paying Rs. 2,19,000 land revenue.

Minhla Township.—Central township of Tharrawaddy District, Lower Burma, lying between 17° 53′ and 18° 20′ N. and 95° 37′ and 96° 4′ E., and stretching from the Pegu Yoma westward to the border of the Monyo township, with an area of 627 square miles, for the most part flat and fertile. In 1891 the population was 75,068, and in 1901 86,939. MINHLA (population, 3,537) is the head-quarters, and the only town. The number of villages is 468. The area cultivated in 1903-4 was 177 square miles, paying Rs. 2,42,000 land revenue.

Zīgon Subdivision.—Northern subdivision of Tharrawaddy District, Lower Burma, comprising the MONYO, GYOBINGAUK, and TAPUN townships, with head-quarters at Zīgon.

Monyo.—Western township of Tharrawaddy District, Lower Burma, lying between 17° 51′ and 18° 21′ N. and 95° 15′ and 95° 38′ E., with an area of 182 square miles. It extends along the eastern bank of the Irrawaddy, and is flat and level throughout. It is the only township of the District not traversed by

the railway. The population was 34,648 in 1891, and 39,964 in 1901. The density is 219 persons per square mile, which, for Burma, is high. The township contained 172 villages in 1901, its largest urban area being Monyo (population, 3,042), the head-quarters, situated on what was once the bank of the Irrawaddy but now some distance from the stream. The area cultivated in 1903–4 was 55 square miles, paying Rs. 33,000 land revenue.

Gyobingauk Township.—Township of Tharrawaddy District, Lower Burma, lying between 18° 7′ and 18° 32′ N. and 95° 28′ and 96° 1′ E., with an area of 431 square miles. Like most of the townships of the District, it is traversed north and south by the railway, and abuts in the east on the Pegu Yoma, its western areas being a level plain. The population was 84,327 in 1891, and 91,040 in 1901. It contains two towns, ZĪGON (population, 2,074) and GYOBINGAUK; and 411 villages. The area cultivated in 1903–4 was 189 square miles, paying Rs. 2,95,000 land revenue.

Tapun.—Northern township of Tharrawaddy District, Lower Burma, bordering on Prome District, lying between 18° 15′ and 18° 47′ N. and 95° 22′ and 95° 58′ E., with an area of 694 square miles. Except in the east, where the forests of the Pegu Yoma cover the ground, it is a level plain. The population was 60,127 in 1891, and 67,589 in 1901. It contains 327 villages, of which the largest is Tapun (population, 1,697), the head-quarters, lying 9 miles to the west of the railway line, which runs north-west and south-east through the township. The area cultivated in 1903–4 was 97 square miles, paying Rs. 1,20,000 land revenue.

Gyobingauk Town.—Head-quarters of the township of the same name in Tharrawaddy District, Lower Burma, situated in 18° 14′ N. and 95° 40′ E., on the Rangoon-Prome railway, 109 miles from Rangoon. Population (1901), 6,030. The town suffers from scarcity of water in the dry season, but so far no systematic water-supply scheme has been started. It is one of the most important rice-trading centres on the Rangoon-Prome line of railway. It possesses one Anglo-vernacular and two vernacular private schools, two of which are aided by the municipality. Gyobingauk was constituted a municipality in 1894. The receipts and expenditure of the municipal fund to the end of 1900–1 averaged Rs. 24,000 and Rs. 22,000 respectively. In 1903–4 the income was Rs. 41,000, including house and land tax (Rs. 3,400), and tolls on markets and slaughter-houses (Rs. 23,200). The expenditure in the same

year was Rs. 45,000, the principal items being conservancy (Rs. 6,200), roads (Rs. 6,900), and hospitals (Rs. 3,000). The municipal hospital has eighteen beds.

Letpadan Town.—Head-quarters of the township of the same name in Tharrawaddy District, Lower Burma, situated in 17° 47′ N. and 95° 45′ E., on the railway, 77 miles from Rangoon, and about 8 miles due north of the District head-quarters. Population (1901), 8,772. It was constituted a municipality in 1894. The receipts and expenditure of the municipal fund to the end of 1900–1 averaged Rs. 23,000. In 1903–4 the receipts and expenditure amounted to Rs. 35,000 and Rs. 38,000 respectively. The chief sources of income were house and land tax (Rs. 4,500), and tolls on markets and slaughter-houses (Rs. 20,300); and the principal items of expenditure were conservancy (Rs. 4,300), hospitals (Rs. 4,800), and roads (Rs. 5,000). The town contains an Anglo-vernacular school maintained by subscriptions, under the management of a local committee, and a municipal hospital. It is an important centre of the paddy trade. The Bassein railway joins the main line from Prome to Rangoon at Letpadan station.

Minhla Town.—Head-quarters of the township of the same name in Tharrawaddy District, Lower Burma, situated in 18° N. and 95° 44′ E., near the centre of the District on the Rangoon-Prome railway, 91 miles from Rangoon. Population (1901), 3,537. The town is administered by a town committee, which consists of five members. In 1903–4 the income of the town fund was Rs. 15,400, and the expenditure Rs. 14,700.

Tharrawaddy Town.—Head-quarters of Tharrawaddy District, Lower Burma, situated in 17° 40′ N. and 95° 48′ E., on the Rangoon-Prome railway, 68 miles from Rangoon in a north-westerly direction. Population (1901), 1,693. Tharrawaddy may be regarded more or less as a suburb of the municipality of THONZE, 2 miles to the south, with which it is connected by road and railway. The Rangoon-Prome road passes through the town, which occupies a well-wooded and compact area, but low-lying. It contains a hospital, the usual District head-quarters offices, the forest school, the residences of the local officials, and some mission buildings. The roads are good and well lighted, the cost of lighting being met from the District cess fund. It is said to have been selected as the head-quarters on account of its good water-supply, after attempts to establish the District court first at Gyobingauk, and then at Kunhnitywa, had failed owing to bad water in those places. It is named after an ancient capital, which

existed about 7 miles to the east of Gyobingauk, where traces of the moats and walls may still be seen.

Thonze.—Town in the Tharrawaddy subdivision and township of Tharrawaddy District, Lower Burma, situated in 17° 38′ N. and 95° 48′ E., on the railway about 2 miles due south of Tharrawaddy town. Population (1901), 6,578. It was constituted a municipality in 1897. The receipts and expenditure of the municipal fund to the end of 1900–1 averaged Rs. 19,000 and Rs. 14,000 respectively. In 1903–4 the receipts were Rs. 30,000, including house and land tax (Rs. 3,000), and tolls on markets and slaughter-houses (Rs. 17,000); and the expenditure was Rs. 25,000, the chief items being conservancy (Rs. 4,500) and administration (Rs. 3,600). The town contains a dispensary.

Zigon Town.—Head-quarters of the subdivision of the same name in Tharrawaddy District, Lower Burma, situated in 18° 22′ N. and 95° 39′ E., in the north of the Gyobingauk township, on the Rangoon-Prome railway, 116 miles from Rangoon. Population (1901), 2,074. Local affairs are managed by a town committee. In 1903–4 the income of the town fund amounted to Rs. 20,000, and the expenditure to Rs. 17,200.

Boundaries, configuration, and hill and river systems.

Pegu District.—District in the Pegu Division of Lower Burma, lying between 16° 54′ and 18° 25′ N. and 95° 57′ and 96° 54′ E., with an area of 4,276 square miles. It was formed in 1883 by taking the townships of Kyauktan, Paunglin (now Hlegu), Pegu (now Kawa and Payāgale), and Pagandaung (now Thabyegan) from Hanthawaddy District. In 1895 the Pyuntazā and Nyaunglebin townships were transferred from what was then Shwegyin District to Pegu, and Kyauktan and Thabyegan were returned to Hanthawaddy. Pegu is separated on the north from Toungoo District by the Kun stream, which rises in the Pegu Yoma and flows in an easterly direction into the Sittang river, which in its turn constitutes the eastern boundary of the District. The Pegu Yoma forms the western boundary; and on the south the District is separated from Hanthawaddy District by an irregularly demarcated line drawn along a spur of the Yoma eastward to the Gulf of Martaban.

Portions of the hilly country in the north-west are picturesque, but the greater part of the District and more than nine-tenths of the inhabited area have little claim to attention except from an agricultural or commercial standpoint. East of the railway line, as far as the horizon, lies a vast almost treeless plain, green in the rains, but very bare during the hot months of the year.

The only rivers of importance are the Pegu river, the Nga-moyeik or Pazundaung creek, and the Sittang. The first rises in the Yoma, and after flowing past Pegu town in a south-easterly direction, finally enters the Rangoon or Hlaing river near its mouth. The second, also rising in the Yoma, has a southerly course through the south-west corner of the District, and flows into the Rangoon river close to where the Pegu river enters it. The Sittang river is navigable by boats of shallow draught, but is extremely dangerous in its lower reaches owing to an enormous bore, which rushes up it from time to time from the Gulf of Martaban. To avoid this, and at the same time to facilitate trade with Rangoon, the Pegu-Sittang Canal was constructed. This canal extends from Myitkyo, on the Sittang, as far west as Tāwa, on the Pegu river, and forms one of the most distinctive geographical features of the District. Other streams which flow from the Yoma eastwards into the Sittang, draining the Nyaunglebin or northern subdivision, are the Kyeingyaung, the Yenwe, and the Pagangwe, which are perennial, but navigable only during the monsoon.

Geology.

The rocks of the PEGU YOMA, which occupies the north-western portion of the District, consist of what have been called Pegu groups of beds, and are Miocene in age. The rest of the District is alluvial, the type of alluvium being that common to the whole of the delta. In the west, where the land is high, laterite exists in large quantities.

Botany.

The forests are of two kinds, evergreen and deciduous. The former may be either closed or open in character. The closed evergreen forests consist of lofty trees of *Sterculia*, *Albizzia*, *Pterocarpus*, *Dipterocarpus*, *Parashorea*, and *Hopea* species, under which are smaller growths. Among palms are found *Livistonia*, *Arenga saccharifera*, *Areca*, and *Calamus*. Climbers and creepers are very numerous and varied, and the flowering shrubs are beautiful. The open evergreen forests are found along the eastern base of the Pegu Yoma as far down as Rangoon. They are less damp than the closed forests, and contain fewer creepers and climbers. Chief among their constituents are *Dipterocarpus laevis*, *D. alatus*, *Parashorea stellata*, *Pentace burmannica*, *Albizzia lucida*, *Lagerstroemia tomentosa*, and *Dillenia parviflora*. The deciduous forests are either open or mixed in character. The open are of two kinds, *in* forests and low forests. The former are found chiefly on laterite, and are characterized by *in* (*Dipterocarpus tuberculatus*), *Dillenia pulcherrima*, *Shorea leucobotrya*, *Pentacme siamensis*, *Xylia dolabriformis*, *Lagerstroemia macrocarpa*, and *Strychnos Nux-*

vomica. The low forests are similar to the *in* forests, but this tree itself is generally absent, and the ground is covered with long stiff grass. The mixed forests are of several kinds. The lower mixed forests are not unlike the low forests, but are without the dense grass covering and the vegetation characteristic of laterite soil; the upper stretches, typical of the Pegu Yoma, contain teak in abundance, and also *Xylia dolabriformis*, *Dillenia parviflora*, three species of *Sterculia* and *Terminalia*, *Lagerstroemia Flos Reginae*, *L. tomentosa*, and *Homalium tomentosum*. Bordering the rivers are savannah forests similar to those described under HANTHAWADDY DISTRICT. Orchids abound everywhere[1].

Fauna.

The jungles are the habitat of all the beasts common to Lower Burma. In the month of December, before the crops are reaped, herds of wild elephants come down from the hills and do great damage; bison, hog, and many kinds of deer are also met with, but their numbers annually decrease owing to their destruction by man, and they are gradually retiring into the hills farther from the haunts of civilization.

Climate, temperature, and rainfall.

The climate of Pegu is very similar to that of Rangoon, but, probably owing to its proximity to the hills, the rainfall is heavier. The average fall for five years is 119 inches recorded at Pegu town, and 114 inches farther north at Nyaunglebin. It is probably rather higher in the hilly areas to the west, and lower in the extreme north near the Toungoo border. Large tracts of country are unprotected by embankments, and on this account are liable to be flooded by the overflow of the Sittang.

History and archaeology.

Legends relate that the town of Pegu was founded by Thāmala and Wimala, two sons of the ruler of the Talaing kingdom of Thaton in A.D. 573, the elder son, Thāmala, being consecrated king. From the commencement of the historical period Pegu was an important centre of Talaing rule, in the end taking the place that had been occupied by the ancient capital of Thaton, and during the closing years of their independence the Talaings were generally known as Peguans. Little is known of the history of Pegu until the beginning of the fifteenth century. The Talaings were constantly at war with the Burmans, and for two centuries and a half were under Burmese dominion. In 1385 Razadirit, one of the greatest of the Talaing kings, came to the throne. This monarch was constantly engaged in hostilities, but it is recorded that before his death in 1422 he found time to devote himself to religion

[1] See Kurz, *Preliminary Forest Report of Pegu* (Calcutta, 1875).

and good works and to the reorganization of his kingdom. In the year 1534 Pegu was besieged by Tabin Shweti, of Toungoo, and ultimately captured. Tabin Shweti reigned ten years in Pegu, and is entitled to the merit of having built numerous pagodas in the District. On his death one of his generals, Bayin Naung, who took the name of Sinbyumyashin ('the lord of many white elephants'), made himself master of the whole of the Sittang Valley. Cesare de' Federici, who visited Pegu in 1569, wrote of this monarch:—

'The Emperor has twenty-six tributary crowned kings and can bring into the field a million and a half of men, and, as they will eat anything, they only want water and salt, and will go anywhere. For people, dominions, gold and silver, he far excels the power of the great Turk in treasure and strength.'

On his death in 1581 Sinbyumyashin's enormous territories, larger than any ever ruled over by a monarch in Burma, were left to his successor, but with the removal of his controlling hand the empire soon resolved itself into a congeries of minor principalities. Pegu fell into the hands of the Burmans of Ava at the beginning of the seventeenth century, and it was not till 1740 that the Talaing dynasty was revived. Seventeen years later the town was once more and finally captured from the Talaings by the famous Alompra (Alaungpayā). The conqueror had from the first made the eclipse of Pegu by his newly founded town of Rangoon one of the main features of his policy, and with the final defeat of the Talaings the old capital ceased to play a part of any importance in history.

During the wars with the British Pegu was the scene of several encounters. After the capture of Rangoon in 1824 the Burman commander-in-chief retired here, but the inhabitants rose against him and handed the place over to the British. During the second Burmese War the town was more stubbornly defended. Early in June, 1852, the defences were carried by a force under Major Cotton and Commander Tarleton, R.N., the granaries were destroyed, and the guns carried away. The Talaing inhabitants, however, at whose request the expedition had been sent, were unable to hold the town after the withdrawal of the British, and the Burmans reoccupied the pagoda platform and threw up strong defences along the river. In November of the same year a force under Brigadier McNeill was sent from Rangoon to retake the town, which object it accomplished after considerable fighting and with some loss. Most of the troops were withdrawn, a garrison of about 500 men with a few guns under Major Hill being left. Hardly had

the main force retired, however, when the Burmans attacked this garrison, which was not ultimately relieved till a considerable force had been dispatched against the enemy. As the result of the war, the province of Pegu passed to the British and became, with the previously acquired provinces of Arakan and Tenasserim, the Chief Commissionership of Lower Burma. Rangoon has ever since been the capital of the Province.

The District contains several interesting pagodas, most of which are situated either in or close to the capital. At Payāgyi, 10 miles north of Pegu on the railway, is a large pagoda which was first built by Nga Ya Gu, the son of a minister of one of the early Peguan kings. The building has long been in bad repair, but is now being renovated.

The people.

The population at the last four enumerations was: (1872) 110,875, (1881) 184,815, (1891) 237,594, and (1901) 339,572. These figures show a rapid growth, only exceeded in Lower Burma by the increase in Myaungmya and Pyapon Districts. The distribution according to townships in 1901 is shown in the following table:—

Township.	Area in square miles.	Number of		Population.	Population per square mile.	Percentage of variation in population between 1891 and 1901.	Number of persons able to read and write.
		Towns.	Villages.				
Hlegu . .	703	...	233	49,642	71	+ 11	13,907
Kawa . .	514	...	206	79,057	154	+ 31	24,579
Payāgale . .	1,236	1	242	93,209	75	+ 33	29,799
Pyuntazā . .	1,443	...	232	52,952	37	+ 129	13,315
Nyaunglebin .	380	1	261	64,712	170	+ 64	15,172
District total	4,276	2	1,174	339,572	79	+ 43	96,772

The great majority of the inhabitants are rural. The District contains one municipal town, Pegu, its head-quarters, and one other urban area containing more than 5,000 inhabitants, Nyaunglebin, administered by a town committee. As is the case everywhere in Burma, Buddhists (305,500) form the majority, but the number of Hindus (18,600) is not insignificant. The latter are for the most part Tamil-speaking cultivators from Madras. The number of Christians is 9,000, and of Musalmāns 4,800. Burmese is the language of 83 per cent. of the population. Karen is freely spoken, but only a small proportion of the Talaings use their ancestral tongue.

Race and occupation.

The Burmans, with a total of 223,500, outnumber all other nationalities. The Talaings are, however, about 45,000, and

the Karens about 33,000 in number. In 1901 no less than 68 per cent. of the total population were directly supported by agriculture. Of these 4,580 were dependent on *taungya* (shifting hill cultivation) alone.

There are 8,885 native Christians. The American Baptist Mission works among the Karens, the chief centres of Christian population being Pado, in the neighbourhood of Nyaunglebin, and Intagaw, in the Kawa township; but the Pwo Karens near Hlegu and the Sgaws in the Payāgale township continue as a rule in the Buddhist faith. There is a Roman Catholic mission at Nyaunglebin, with a good brick church. In 1901, 6,982 persons were returned as belonging to the Baptist communion, the number of Roman Catholics being only 257. It is probable that a good many of the Roman Catholics of the District omitted to give their denomination at the Census, and thus were included in the total of those whose sects were not returned.

Christian missions.

Pegu consists for the most part of a vast alluvial plain, formed by the deposits of the Sittang and Pegu rivers and their tributaries. The soil is a rich loam, and generally fertile. In the north of the District, where cultivation is comparatively recent, the crops are particularly plentiful; but in the southern townships of Hlegu and Kawa the soil is beginning to show signs of exhaustion, and fallows are not infrequent. The easternmost part of the Kawa township has been quite recently formed by fresh deposits of the Sittang, and the soil here is so impregnated with salt that cultivation is not on the whole very profitable. To the advantages of a fertile soil are added those of a plentiful supply of rain. In fact cultivation sometimes suffers from an excess of water; and owing to the uniform flatness of most of the District, when a flood does occur its effects are apt to be very far-reaching.

General agricultural conditions.

There is little that calls for special note in connexion with the systems of cultivation in the District. In growing rice the ordinary methods obtaining in Lower Burma are followed. Ploughing is begun in June, shortly after the beginning of the rains, and transplanting, where in vogue, is generally completed by the end of August. In most parts, however, transplantation is not largely adopted. Sowing broadcast is much cheaper, and under favourable conditions of soil and rainfall this method is found to produce a sufficiently good crop, so that, as a rule, transplanting from nurseries is undertaken only in order to fill up gaps where sowing has not proved successful. The practice of pruning the rice by cutting off

the tops of the blades before the plant comes into ear seems to be not uncommon. Reaping is begun in December, and the harvest is generally completed by the end of January.

Chief agricultural statistics and principal crops.

The following are the main agricultural statistics for 1903-4, in square miles:—

Township.	Total area.	Cultivated.	Forests.
Hlegu	703	161	2,557
Kawa	514	345	
Payāgale	1,236	296	
Pyuntazā	1,443	170	
Nyaunglebin	380	188	
Total	4,276	1,160	2,557

In 1903-4 rice occupied 1,133 square miles, out of a total cultivated area of 1,160 square miles, or as much as 98 per cent. Several varieties are produced, that known as *ngasein* being the commonest in all parts, but the preference for any particular kind seems to depend on little else than custom or the whim of the cultivator. After rice, the principal food-crops are mangoes, plantains, and jack-fruit. Nearly 11,000 acres are under orchards, about a quarter of this being given up to plantains. Some maize and tobacco and a little sesamum are grown, but these products are of no great importance.

Improvements in agricultural practice.

In most parts of the District the area under cultivation is being rapidly extended. It stood at 908 square miles in 1891, 1,141 square miles in 1901, and 1,160 square miles in 1904. It has, in fact, been found necessary of late to depute several officers for the sole purpose of making grants of land. The new ground on the bank of the Sittang furnishes the most important field for their work. Farther north, too, lie large tracts of hitherto unoccupied jungle land, which are being taken up and cleared for cultivation. Apart from the increase in area, cultivation does not seem to be very progressive. Little or no improvement can be noted in the quality of the seed, nor have attempts to introduce new varieties met with any success. The working of the Land Improvement and Agriculturists' Loans Acts is said to be not altogether successful in Pegu. In spite of the precautions taken to prevent large areas of land from falling into the hands of speculators, the annual statistics show a large increase in the landlord class.

Cattle, &c.

Cattle-breeding is not carried on to any great extent. Most of the cattle used by cultivators are imported from the Shan

States or Upper Burma. There are, however, in the north a few low-lying tracts where the ground is too deeply flooded for cultivation, and here buffalo-breeding becomes an occupation of some importance. In the Pyuntazā, Nyaunglebin, and Hlegu townships no difficulty is experienced in feeding cattle. In the Payāgale and Kawa townships, however, where cultivation has practically monopolized the whole available area, more grazing-grounds are urgently wanted. From the Nyaunglebin subdivision herds of buffaloes have to be sent after the ploughing season to other parts of the District, where they can be more conveniently fed till the following rains. There is no sheep or goat breeding.

Irrigation and fisheries. The District is so well provided with water that no system of irrigation is necessary. There are over a hundred fisheries in different parts, especially in the flooded tracts of Pyuntazā and Kawa, which are leased annually for sums ranging from Rs. 100 to Rs. 5,000 ; but the fishing industry nowhere assumes the importance that it does in the Irrawaddy delta.

Forests. With the exception of a few areas reserved for fuel-supply in the middle of the cultivated plains, the whole of the forest system lies to the west of the railway, covering the broken and hilly country on the slopes of the Pegu Yoma. South of the Kodugwe stream is an extensive evergreen tract, which is one of the most remarkable and beautiful features of the District, but it produces only the *pyinma* (*Lagerstroemia Flos Reginae*) and *thitsi* (*Melanorrhoea usitata*) among trees which have a marketable value. In the deciduous forests are found teak, *pyingado* (*Xylia dolabriformis*), *kanyinbyu* (*Dipterocarpus alatus*), *kokko* (*Albizzia Lebbek*), and *in* (*Dipterocarpus tuberculatus*), together with other trees, many with gorgeous flowers and luxuriant foliage. Savannah forests are still to be found near the mouth of the Sittang, but they are fast disappearing, to give place to cultivation. The few patches of scrub jungle east of the railway line contain large quantities of a creeper (*Parameria glandulifera*) which yields a good quality of rubber. Minor products of more importance commercially, however, are wood-oil, *shaw* fibre (*Sterculia*), bamboo, and cane. A quantity of timber is floated down the Sittang, and thence, through the Pegu-Sittang Canal, into the Pegu river. Of the whole area of 4,276 square miles comprised within the District of Pegu, 2,057 square miles are included in 'reserved' forests, and about 500 square miles are classed as unprotected forest land. The gross forest receipts in 1903-4 amounted to 2 lakhs.

Minerals. Very few minerals are known to exist. A prospecting licence to search for gold in the bed of the Sittang river has recently been granted to a European firm, who have large interests in the petroleum trade in Upper Burma. It remains to be seen whether their operations will have any result in that portion of the stream that skirts Pegu District. Laterite is plentiful in the west, and clay is extensively used for pottery work at Pegu and Tāwa, and for the manufacture of bricks, of which a large and constant supply is required for pagoda building.

Arts and manufactures. In a District so largely devoted to rice cultivation, only domestic industries or those ancillary to agriculture provide employment for any considerable number of the people. Pegu was in former days famed for its pottery, but the article well-known throughout the country as the Pegu jar is not now manufactured to any extent in the District. The industry is still carried on, however, in Pazunmyaung, on the bank of the Sittang, and in the town of Pegu itself. Here, in the dry weather, pots of the ordinary domestic kinds are made in large quantities for local use, the glazing material being brought from the hills east of the Sittang; but the ceramic art is no longer practised with the skill and assiduity of former days.

Mention must be made of the silver-work of Pegu. There is nothing peculiar in the methods of the silversmiths; but special care and dexterity appear to be applied to the work, and prizes have been won by local artificers at exhibitions. In parts of the Hlegu township, where the *thinbyu* reed is readily obtainable, mat-making is practised. Carts and agricultural tools are made in quantities, but only for the local market. In spite of the vast quantity of paddy produced, the rice-milling industry is practically non-existent. There are two small mills in Pegu and one at Nyaunglebin, but the rice-mills of Rangoon are so easily and quickly reached that the profits of local millers are barely sufficient to make it worth their while to work regularly. Timber-sawing affords employment for some of the inhabitants of the western part of the District, and there are steam saw-mills at Pegu, at Nyaunglebin, and at Madauk on the Sittang river.

Commerce and trade. The enormous plain which occupies the eastern portion of the District is entirely given up to the cultivation of rice, which finds its market in Rangoon. During the months of January and February the resources of the railway are severely strained to convey the mountains of paddy that are stacked at the stations north of Pyinbongyi. The ceaseless roll of carts, the

volumes of dust, and the babel of voices make existence intolerable in any of these so-called railway towns during the busy season. The rice from the southern part of the District is generally conveyed by the numerous waterways that converge at Rangoon. On the east side the canal south of Minywa is alive with traffic at this time; and the lock at Tāwa, where boats congregate to await the tide in the Pegu river, presents at night an animated and striking scene. On the south-western side of the District the Pazundaung creek, which flows into the Hlaing at Rangoon, carries down almost all the rice from the Hlegu township. The great majority of the population are engaged in some way in agriculture, even traders and others striving hard to get possession of land. The monopoly of commerce is practically in the hands of Chinamen and natives of India, though in the large bazars of the District are to be found numbers of Burman silk and cloth-dealers.

Communications. The main railway line connecting Rangoon with Mandalay runs through the heart of the District, making a parabolic curve eastward, with its vertex at Nyaunglebin. There are at present nineteen railway stations in the District. A railway from Pegu to Martaban is in process of construction. The road from Pegu to Rangoon runs almost parallel to the railway, but inclines more to the west, until it reaches the Prome road at Taukkyan, in Hanthawaddy District, where it turns south. The road to Toungoo in the north runs more or less parallel to the railway, and numerous cross and feeder roads connect the main lines of communication, such as the Dabein-Hlegu, the Nyaunglebin-Pazunmyaung, the Pegu-Thanatpin, and the Payāgyi-Payābyo roads. The most important highways are maintained from Provincial funds. Embankments are plentiful in the low-lying parts of the country. In the south-eastern portion of the District communications are far from perfect, for, with the exception of two short highways in the Kawa township, there are absolutely no means of reaching in the rains an enormous area which is being brought under cultivation west of the mouth of the Sittang, a great deal being new land formed from deposits swept by the river from the eastern or Thaton bank. The lengths of metalled and unmetalled roads are, respectively, 140 and 68 miles. Further means of communication are provided by the Pegu-Sittang Canal, which runs from Myitkyo on the Sittang to Tāwa on the Pegu river, and by a branch running through the Thanatpin Lake into the old town moat of Pegu. Along this canal ply a number of launches.

District subdivisions and staff.

The District is divided into two subdivisions, Pegu and Nyaunglebin, of which the former consists of three townships, HLEGU, KAWA, and PAYĀGALE, and the latter of two, NYAUNGLEBIN and PYUNTAZĀ. The Nyaunglebin subdivision is ordinarily in charge of an Assistant Commissioner, while the Pegu subdivision and each of the five townships are administered by Extra-Assistant Commissioners or *myo-oks*. There are still eleven circle *thugyis* in the District, the remnant of the old revenue-collecting agency. These petty revenue officials have, however, for the most part been superseded by *ywathugyis* (village headmen). The village headmen number 531; and on their efforts in helping the police, collecting the revenue, and generally assisting District officers practically depends the success of the administration. Except where there is a circle *thugyi*, village headmen are paid by commission on the amount of revenue they collect, and they are also authorized to take fees in petty cases which they are empowered to decide. At head-quarters are a treasury officer, an *akunwun* (in charge of the revenue), and a superintendent of land records, with a staff of 6 inspectors and 51 surveyors. The District forms a Public Works division, with subdivisional officers at Pegu, Nyaunglebin, and Thanatpin; it is also conterminous with the Pegu Forest division.

Civil justice and crime.

Till recently the administration of justice in the District, as in the Pegu and Irrawaddy Divisions generally, was in a transitional stage. The Commissioner was Sessions Judge and the Deputy-Commissioner was District Judge, but the greater part of their judicial work was done by Additional Judges. The Pegu and Toungoo Districts now, however, form the charge of a whole-time District Judge with head-quarters at Pegu, and Pegu with Hanthawaddy forms the charge of the Hanthawaddy Divisional and Sessions Judge, whose head-quarters are at Rangoon. There are no whole-time subdivisional judges; but the township courts of Hlegu and Kawa are presided over by a judge at Kawa, the Nyaunglebin and Pyuntazā township courts by a judge at Nyaunglebin, and the township court of Payāgale by a judge at Pegu, who also exercises Small Cause Court powers in Pegu town. As might be expected, where the country is so fast coming under cultivation, the majority of civil cases are brought on assignments of land. In spite of the elaborate precautions taken to prevent large areas from falling into the hands of adventurers and speculators, the annual statistics prove that the landlord class has obtained a firm hold. The large number of undefended

suits is an index of the hopelessness of resistance to the mortgagee's claims, and on the survey maps it is easy to trace the huge holdings that have passed into the hands of cosmopolitan capitalists. Chinamen and Chettis, Chulias and Coringhis, generally clothed with an innocent *alias*, apply, and often successfully, for large grants of land, which others are hired to clear and cultivate. Thus, not only old, but large portions of new, land have already passed into the possession of absentee landlords.

Violent crime is not as common in Pegu as in the neighbouring districts of Hanthawaddy and Tharrawaddy. Freedom from this form of criminality is said to be due to the fact that there are practically no toddy trees in the District, and that liquor is not so readily procurable as in some localities. During the year 1902, with a population of nearly half a million, not a single murder was reported. Dacoity is rare, and in the cases that do occur the accused are often found to belong to other Districts. Cattle-theft is undoubtedly common, though the statistics compare favourably with those of the surrounding areas; but the presence of cattle-thieves is not surprising, when one considers the completely unprotected state in which cattle are allowed to roam for months at a time, before and after they are wanted for ploughing.

Revenue administration. Up to 1883 Pegu formed part of Hanthawaddy (or Rangoon) District. The southern portion of the present District, including the whole of the Pegu subdivision and a further area subsequently transferred to Hanthawaddy, was cadastrally surveyed in the years 1881–3, and was brought under settlement in 1882–4. In 1895 the District boundaries were altered, Kyauktan and Thabyegan in the south were relinquished to Hanthawaddy, and the Pyuntazã (now called the Nyaunglebin) subdivision was added in the north. The settlement of the southern areas was for a period of fifteen years, and had therefore to be revised during 1898–1900. This resulted in a net increase in revenue of Rs. 3,00,000, or nearly 26 per cent. The northern subdivision, with the exception of the Bawni circle, was settled in the year 1897–8. The highest rate of land revenue at present paid is Rs. 4 per acre. This is levied in about 38 villages in the Kawa township, in the middle of the large plain east of the railway line, which is not reached by the tidal waters of the Sittang. In some of the circles which lie farther east, and in the Hlegu and Payãgale townships, the rates vary between Rs. 3–8 and Rs. 2, though in the newly cleared and hilly lands west of the railway line they are

as low as Rs. 1–4. In the northern subdivision, too, the prevailing rates are between Rs. 2 and Rs. 3–8, but on the whole the average assessment there is lower, in consequence of the distance from the Rangoon market. The overflow of the Sittang and the vagaries of the hill streams, especially in the vicinity of Pyuntazā village, are responsible for the low rates fixed in some of the northern circles. It was originally intended that the Bawni circle, which lies in the township of Pyuntazā, should be settled along with the rest of the Nyaunglebin subdivision in the season 1897–8. Owing, however, to the extraordinarily rapid extension of cultivation, it was discovered that the cadastral maps were already out of date by the time the Settlement officer arrived, and it was decided to postpone the settlement till a resurvey had been effected. The rate assessed on garden land is generally Rs. 2–8 per acre in the southern subdivision, and Rs. 2 in the northern; but somewhat higher charges are made on land under tobacco, *dani* palm, or miscellaneous cultivation. The average assessment on land under cultivation of all kinds is a fraction over Rs. 2 per acre, and the average size of a holding is 26·6 acres.

The following table shows the growth of the revenue in recent years, in thousands of rupees:—

	1880–1.	1890–1.	1900–1.	1903–4.
Land revenue . .	5,30	7,95	15,64	18,72
Total revenue . .	5,83	8,74	25,23	30,72

The other main items besides land revenue in 1903–4 were capitation tax (Rs. 3,49,000), excise (Rs. 4,14,000), and fisheries (Rs. 2,10,000).

Local and municipal government. The District cess fund, administered by the Deputy-Commissioner for the provision of various local needs, yielded an income of Rs. 2,39,000 in 1903–4, and the expenditure was Rs. 2,42,000, of which about half was devoted to public works. The only municipality in the District is PEGU, but NYAUNGLEBIN is in charge of a town committee.

Police and jails. The police are under the control of the District Superintendent. Each subdivision is in charge of an Assistant Superintendent, and each township has an inspector. The subordinate civil police force consists of 8 head constables, 40 sergeants, and 249 constables. The military police force numbers 3 native officers, 26 non-commissioned officers, and 196 sepoys, who are employed to escort prisoners and treasure

and to patrol the District in the dry season. The number of headmen is 531, and these, with a large number of 'ten-house' *gaungs*, constitute the rural police. There are sixteen police stations and one outpost. Military police are posted at the subdivisional and township head-quarters, and at two other outlying police stations. There is no jail in the District. Convicts are sent to the Rangoon Central jail to serve out their sentences.

Education.

The proportion of literate persons is high. It amounted in 1901 to 45 per cent. in the case of males and 9·2 per cent. in the case of females, or 28·5 per cent. for both sexes together. The number of pupils was 8,740 in 1891, 16,446 in 1901, and 18,361 in 1903–4, of whom 3,705 were girls. In the last year there were 20 secondary, 281 primary, and 363 elementary (private) schools in the District. These figures include both lay and monastic seminaries. The public institutions are under the supervision of three deputy-inspectors of schools. The work of one of these is confined to the Karen schools. The Burman schools were till recently under the charge of a single deputy-inspector, but a second officer of this class has been appointed recently. The Karen schools form a considerable proportion of the total. The only institution worthy of special note is the Pegu municipal school. Local fund expenditure on education amounted, in 1903–4, to Rs. 43,800, of which Rs. 37,600 came from the District cess fund, and Rs. 6,200 from municipal funds. The Provincial expenditure was Rs. 5,100.

Hospitals and dispensaries.

The District contains two hospitals with 52 beds, and three dispensaries. Excluding the figures for two of the latter, 24,316 cases were treated in 1903, of whom 2,120 were in-patients, and 1,121 operations were performed. Of a total income of Rs. 13,500, municipal funds provided Rs. 6,700, the District cess fund Rs. 1,500, and town funds Rs. 2,800.

Vaccination.

Vaccination is compulsory only within municipal limits. In 1903–4 the number of successful vaccinations was 10,167, representing 30 per 1,000 of the population.

[H. Des Voeux, *Settlement Report* (1899); W. E. Lowry, *Settlement Reports* (1900 and 1901); W. V. Wallace, *Settlement Report* (1902).]

Pegu Subdivision.—Subdivision of Pegu District, Lower Burma, consisting of the HLEGU, KAWA, and PAYĀGALE townships.

Hlegu.—South-western township of Pegu District, Lower Burma, lying between 16° 54′ and 17° 37′ N. and 96° 1′ and

96° 25′ E., with an area of 703 square miles. The population was 44,758 in 1891, and 49,642 in 1901. The township contains 233 villages, one of the largest of which is Hlegu (population, 1,666), the head-quarters, situated about 12 miles west of the railway, at the point where the Rangoon-Pegu road crosses the Pazundaung stream. The population is mainly Burman, but Karens are numerous. Except at its northern end, Hlegu is level and fertile. The area cultivated in 1903-4 was 161 square miles, paying Rs. 2,57,600 land revenue. The township was formerly known as Paunglin, and was included in Hanthawaddy District till 1883.

Kawa.—South-eastern township of Pegu District, Lower Burma, lying between 16° 58′ and 17° 26′ N. and 96° 17′ and 96° 53′ E., with an area of 514 square miles. It is a flat area producing rice, and lying for the most part between the Pegu river and the mouth of the Sittang. In 1901 it contained 206 villages, with a population of 79,057, its inhabitants in 1891 having numbered 60,435. The head-quarters are at Kawa (population, 1,866), on the left bank of the Pegu river, not far from Tongyi railway station. The area cultivated in 1903-4 was 345 square miles, paying Rs. 6,59,800 land revenue.

Payāgale.—Central township of Pegu District, Lower Burma, lying between 17° 15′ and 17° 57′ N. and 96° 1′ and 96° 54′ E., with an area of 1,236 square miles. It contains one town, Pegu (population, 14,132), the head-quarters of the District, and 242 villages. The township head-quarters are at Payāgale, a village of 882 inhabitants on the railway, about 14 miles north of Pegu. The population was 69,822 in 1891, and 93,209 in 1901. The western half of the township is hilly and sparsely populated, and though the eastern half is a level plain crowded with villages, the average density is only 75 persons per square mile. The area cultivated in 1903-4 was 296 square miles, paying Rs. 4,73,300 land revenue.

Nyaunglebin Subdivision.—Subdivision of Pegu District, Lower Burma, consisting of the Pyuntazā and Nyaunglebin townships, divided in 1899-1900.

Pyuntazā.—Township in Pegu District, Lower Burma, lying between 17° 37′ and 18° 23′ N. and 96° 0′ and 96° 53′ E., with an area of 1,443 square miles. The population, which numbered 23,132 in 1891, had risen in 1901 to 52,952, thus more than doubling itself during the decade. The western tracts are hilly, and in spite of the populous nature of the flat eastern half, the average density in 1901 was only 37 persons per square mile. The head-quarters are at Pyuntazā, a village

of 1,273 inhabitants, on the railway which passes across the centre of the low-lying area. The total number of villages is 232. The area cultivated in 1903-4 was 170 square miles, paying Rs. 2,58,600 land revenue.

Nyaunglebin Township.—Northern township of Pegu District, Lower Burma, lying between 17° 53′ and 18° 25′ N. and 95° 57′ and 96° 52′ E., with an area of 380 square miles. The population increased from 39,447 in 1891 to64,712 in 1901. The head-quarters are at NYAUNGLEBIN (population, 7,627) on the railway. The western portion consists of hills and forests, but so thick is the population in the neighbourhood of the railway, which passes up the eastern plain land, that the average density is 170 persons per square mile. The number of villages is 261. The area cultivated in 1903-4 was 188 square miles, paying Rs. 2,22,400 land revenue.

Nyaunglebin Town.—Head-quarters of the Nyaunglebin subdivision and township, in Pegu District, Lower Burma, situated in 17° 57′ N. and 96° 45′ E., in flat rich country near the north-eastern border of the District on the Rangoon-Mandalay railway, 46 miles from Pegu and 93 from Rangoon. The town, which is an important centre of the paddy trade, had a population of 7,627 in 1901. It was constituted a 'notified area' in 1902, and placed in charge of a town committee. The income of the town fund in 1903-4 was Rs. 25,500. The hospital has sixteen beds, and is supported chiefly from the town fund.

Pegu Town.—Head-quarters of Pegu District, in the Pegu Division of Lower Burma, situated in 17° 20′ N. and 96° 29′ E., on the railway, 47 miles to the north-east of Rangoon. The town stands on the banks of a river bearing the same name, and partly on a ridge which forms the extremity of a long spur of the Pegu Yoma. Its population at each of the last four enumerations was: (1872) 4,416, (1881) 5,891, (1891) 10,762, and (1901) 14,132. Its increase during the past thirty years has been steady, though it seems probable that it will in the future owe its reputation rather to its antiquity and historical associations than to its commercial importance. The majority of the inhabitants are Buddhists. Pegu, doubtless, originally owed its importance to the fact that it was situated at the highest navigable point of a perennial river, which is easily reached from all points of the rich rice plain on the east, and which flows directly past Rangoon, the principal port of the country. In far distant times the rising ground where the town now stands was almost certainly situated on the sea-

coast; and the legend goes that Hanthawaddy (a term originally applied to a considerable tract of country in the neighbourhood of Pegu) was the name given to the spot where the geese (*hintha*), like the ark on Mount Ararat, first settled after the retirement of the waters.

Pegu has for centuries been connected with the Talaings or Peguans, who from the commencement of the historical period till comparatively modern times were the dominant nationality in the southern portion of what is now Burma. Thaton was the earliest known Talaing capital. It is said to have been in A.D. 573 that the Peguans established themselves in Pegu. The town first became known to the outside world, however, in the days when the Toungoo dynasty of Burmese kings ruled in it. It is described by European travellers in the sixteenth century as of great size and magnificence. Cesare de' Federici, who visited it in the latter portion of the sixteenth century while it was the capital of the Toungoo kings, has given a detailed description of its glories. When Alaungpayā overran and conquered Pegu in the middle of the eighteenth century, he employed every means to efface all traces of Talaing nationality, destroying every house in the town and dispersing the inhabitants. His fifth son Bodawpayā, who succeeded in 1781, pursued a different policy, and in his time the seat of the local government was for some time transferred from Rangoon to Pegu. The town figured in both the first and second Burmese Wars. In the second war it was twice captured, and was the scene of a good deal of fighting.

The present city consists of two portions, the areas within and without the four walls by which the old town was encompassed. In general plan and configuration it may be compared more closely to Ava than to any of the other royal residences. On the top of the walls, which are about 40 feet wide, are built the residences of the European officials, and under the shade of the mango and other fruit trees which stud the slopes there is a delightful retreat from the surrounding heat and glare. Between the western face of the old fortifications and the river are the bazar and main portion of the native town, while in the centre of the enclosure, towering to a height of 324 feet, is the golden cone of the Shwemawdaw pagoda, one of the most remarkable buildings in Burma, and an object of greater veneration to the Talaings than even the Shwedagon pagoda at Rangoon. The shrine owes nothing to its site, but in symmetry of design and beauty of structure it is perhaps unrivalled. Along the roads in this part of the town are the principal

Government buildings and private houses, the courthouses, municipal office, circuit-house, and school, while across the river stretches an iron double-girder bridge. This was originally intended for Akyab, but fortunately for Pegu it was found too short for the purpose for which it was required in Arakan. Farther to the west, beyond the railway, and about a mile from the river, is a gigantic recumbent image of Buddha called the Shinbinthalyaung, one of the most interesting monuments in the Province.

The management of the town has, since 1883, been vested in a municipal committee. Between 1890 and 1900 the income of the municipality averaged Rs. 48,000 yearly. In 1903-4 it was Rs. 1,14,000. Fees from bazars and slaughter-houses yield about half of the receipts, while direct taxation, including levies on account of conservancy and lighting, produce nearly Rs. 20,000. The expenditure, which during the decade averaged Rs. 51,000, amounted to Rs. 1,01,000 in 1903-4. The chief objects on which money is expended are education (Rs. 4,000), conservancy (Rs. 16,000), public works (Rs. 22,000), hospital (Rs. 20,000), and general establishment (Rs. 8,000). The principal problems that the committee has to solve are the provision of a water-supply, the setting on foot of an adequate scheme of conservancy, and the improvement of the drainage system. The first of these is very difficult. The water of the river is not fit for drinking purposes, and that obtained from shallow wells, sunk in different places, has, on analysis, been found impregnated with noxious germs. An attempt was made to form a reservoir in a portion of the old moat, and to this end several houses were expropriated from sites on its banks; but this scheme was doomed to failure, owing to the discovery of impurities in the moat water. The town, which has in many parts a subsoil of laterite, and slopes gently down to the banks of the river, has a good natural drainage, but this requires much artificial assistance in the congested portions near the bazar. The masonry drains at present existing are inadequate, and a considerable outlay will be needed for their extension and improvement.

The bazar claims notice as being the hive round which the native inhabitants swarm from the first break of dawn until long after midday. The main portion of the building consists of five sheds, with brick walls and shingle roof of little architectural value. It is perhaps due to their proximity to the river that these buildings have escaped for so many years destruction by fire. Next to the bazar the favourite rendezvous is the bank of

the canal which has been constructed to join the main Sittang Canal near Thanatpin. The traffic along this waterway is so great that, in their efforts to crush competition and continue a monopoly, the principal launch-owners have even conveyed passengers without charge. In the carrying trade, by steam-launch, by Chinese *sampan*, and by the long Chittagong boat, which is now so popular in the delta, the Burman has practically ceased to compete. The town possesses no industries of importance. Pottery and silver-work are turned out, and two small rice-mills are at work. By no means the least important institution in the town is the hospital, with thirty-six beds. It is built in three blocks, one for the public generally, a second for the offices and storerooms, and a third for members of the military police.

Boundaries, configuration, and hill and river systems.

Prome District.—District in the Pegu Division of Lower Burma, stretching across the valley of the Irrawaddy between 18° 18′ and 19° 11′ N. and 94° 41′ and 95° 53′ E., with an area of 2,915 square miles. It is bounded on the north by Thayetmyo District; on the east by the Pegu Yoma; on the south by Henzada and Tharrawaddy Districts; and on the west by the Arakan Yoma. The Irrawaddy flows through the District from north to south, dividing it into two portions, differing considerably in area, appearance, and fertility. To the west of the river lies the Padaung township, constituting about one-third of the total area of the District. Here the country is broken up by thickly wooded spurs from the Arakan Yoma into small valleys, drained by short and unimportant tributaries of the Irrawaddy, and but little cultivated. The remaining six townships lie to the east of the Irrawaddy. North and north-east of Prome town the country resembles that on the Padaung side; for the forest-covered spurs of the Pegu Yoma form numerous valleys and ravines, stretching as far as the Irrawaddy, and watered by torrents which, as they proceed south-west towards level country, eventually unite into one large stream called the Nawin, spanned by a wooden bridge to the north of Prome. The south and south-west consist of a large and well-cultivated plain, intersected by low ranges with a general north and south direction, the chief of which are called the Prome hills. Towards the east and south-east this fertile tract is drained by streams, shut out from the Irrawaddy by the Prome hills, and sending their waters into the Inma Lake, from which the Myitmakā (known farther south as the Hlaing) flows seawards in a line parallel to that of the Irrawaddy. The Inma, the only lake of any size, is 10 miles long and 4 wide in the

broadest part. It is 12 feet deep in the rains, but practically dries up in the dry season.

The hills that bound the District, the Pegu Yoma on the east and the Arakan Yoma on the west, are geologically dissimilar. The eastern range, in common with the whole country lying between the Irrawaddy and Sittang rivers (if we except an outlier or two of crystalline rocks near Toungoo), is composed of beds none of which is older than the Miocene or Middle Tertiary period, while the western range consists of two groups of beds, a newer of Eocene or Early Tertiary age, and an older group of (probably) Triassic age, with here and there scattered outcrops of serpentine. The Pegu group, made up of the Pegu range and the greater part of the District east of the Irrawaddy, as well as a tract to the west of that stream, may be divided into three parts—lower, middle, and upper. The lower division consists mainly of a series of beds of blue clay, which seem entirely devoid of fossils, and may, it is conjectured, have a thickness of 400 feet. The middle division is represented by a considerable thickness of massive argillaceous sandstone grits and shales, the latter predominating towards the base. These beds are generally devoid of fossils, and can be seen to the best advantage in the gorge above Prome. The upper division, not less than 600 feet thick, contains shales and sandstones, and is extremely rich in fossils, apparently of Middle Tertiary age. The bed at the base of this division forms the river bank nearly opposite Prome. Geology.

The vegetation is mainly composed of deciduous forests, which can be divided into *in* forests, upper mixed forests, dry forests, and savannah forests. The *in* forests are mainly characterized by *in* (*Dipterocarpus tuberculatus*), and are similar to those described under PEGU DISTRICT, as also are the upper mixed forests, in which teak is abundant. The dry forests are characteristic, and contain among their chief constituents *Dalbergia cultrata*, *Diospyros burmannica*, *Buchanania latifolia*, and *Crataeva religiosa*, and among shrubs *Thespesia Lampas*, *Barleria cristata*, *B. dichotoma*, *Calotropis*, *Clerodendron infortunatum*, and *Bambusa Tulda* and *B. stricta*. In certain areas *sha* (*Acacia Catechu*) forms a conspicuous part of the vegetation. The river is bordered with savannah forests (described under HANTHAWADDY DISTRICT) and many widespread weeds—*Amaranthus*, *Rumex maritimus*, *Polygonum*, *Ranunculus sceleratus*, and others. Botany.

The fauna is of the usual type. One of the most characteristic wild animals of Burma, the *thamin* or brow-antlered deer, Fauna.

abounds in the high grounds to the east of Prome. The elephant and the rhinoceros are found, but only in the Arakan Yoma.

Climate, temperature, and rainfall.

The climate of Prome is much drier than that of the rest of the Pegu Division, and its temperature has a wider range, from about 60° in January to 100° in June. The District has a lighter rainfall than any other District of Lower Burma, except Thayetmyo; it is fairly regular and well distributed, the average for the last decade being 48 inches for the whole District, 43 inches at Prome, 48 inches at Shwedaung, and 53 inches at Paungde.

History and archaeology.

The Burmese name for Prome is *Pyi*, and according to tradition the once-flourishing kingdom of Prome was founded by a king named Dutabaung, of the Pyu tribe, who with the Arakanese and other tribes constituted the Burman race in the remote past. Early accounts place the foundation of Tharekhettra, the old capital, the year after the second great Buddhist Council, held in 443 B.C. Of this ancient city only a few embankments and pagodas remain in marshy ground 5 or 6 miles from Prome. Later on, we hear of a reigning house founded by one Tepa, which, as there is no record of a subsequent line, probably lasted till the first break-up of the kingdom of Prome. There is little of historical value in the ancient Prome chronicles; but these seem to point to the conclusion that the Pyus were members of the Burman race, who, cutting themselves off at an early date from the parent stock, then concentrated at Tagaung, and struck off down the Irrawaddy valley till they were brought up by the Talaing dominion on the edge of the delta, where they halted and formed a principality of their own. Little credence can be given to the stories of the early kings, but it seems clear that during the early centuries of the Christian era the Pyus suffered defeat at the hands of the Talaings. The year 104 B.E. (A.D. 742) is given as the date of the destruction of Prome by the Peguans. With the overthrow of the Pyu dynasty the reigning house is said to have withdrawn north again, and founded a new kingdom at Pagan; and it seems probable that the sack of Prome in the eighth century was more or less connected with one of the movements which culminated in the glories of mediaeval Pagan. The Talaings never had a firm hold over Prome. We hear later of an independent kingdom; and it was in the neighbourhood of Prome that the forces of Prome, Ava, and Arakan were defeated by a Toungoo army in 1542. In the middle of the eighteenth century Prome was, however, held by the

Talaings, and the town was the scene of much carnage during the operations which ended in the overthrow of the Peguans by the Burmese conqueror Alaungpayā. Prome played a not inconspicuous part in the first Burmese War, for the investment of the town by a Burman army of 60,000 men in 1825, and the defeat of this force by Sir A. Campbell, constituted one of the most decisive features of the campaign. The town was temporarily occupied in the second Burmese War by a small force under Commander Tarleton, and the subsequent defeat of the Burman leader by General Godwin confirmed its possession by the British in 1852. The timely rebellion of Mindon Min caused the withdrawal of the Burman troops from the District during the rest of the war, and there has been no serious trouble since its annexation in 1852.

The chief objects of archaeological interest are two pagodas, the Shwesandaw and the Shwenattaung. The former is 80 feet high and stands, its gilded cone conspicuous from afar, on a platform of stone on a hill in Prome town. Various tales describe its foundation, and it is supposed to contain four hairs from Gautama's head. It has been repaired and enlarged from time to time, and the festival in November is numerously attended. The Shwenattaung pagoda lies in the Shwedaung township, 14 miles south of Prome, and tradition makes the wife of Dutabaung its foundress. It is said to be the repository of certain relics of Gautama, and its eight-day festival in March is attended by thousands.

The people.

The population of the District at the last four enumerations was: (1872) 280,288, (1881) 328,905, (1891) 368,977, and (1901) 365,804. The distribution according to townships in 1901 is shown in the following table:—

Township.	Area in square miles.	Number of		Population.	Population per square mile.	Percentage of variation in population between 1891 and 1901.	Number of persons able to read and write.
		Towns.	Villages.				
Prome . .	9	1	*Nil*	27,375	3,042	− 9	10,654
Paukkaung .	694	...	241	29,797	43	− 7	5,205
Hmawza .	273	...	447	68,591	251	− 13	16,040
Paungde . .	379	1	250	60,604	160	+ 7	13,548
Thegon . .	241	...	296	60,982	253	+ 15	13,533
Shwedaung .	300	1	311	66,743	222	+ 1	16,837
Padaung. .	1,019	...	216	51,712	51	− 1	11,971
District total	2,915	3	1,761	365,804	125	− 1	87,788

The rural population (excluding Prome, Paungde, and Shwedaung towns) is 316,537, distributed in 1,761 villages, giving a density of 109 persons per square mile. Away from the Irrawaddy valley, in the forest areas of the Paukkaung and Padaung townships, the population is sparse. Prome is one of the very few Districts of Burma which returned a smaller population in 1901 than in 1891. The decrease is due to the emigration of Burmans from Prome town and the neighbouring country, and from the hill tracts in the east and west of the District, to the more generous rice-bearing areas of the delta. The other portions of the District, especially the townships of Thegon and Paungde, lying on either side of the railway, have increased in population. The people are nearly all Buddhists, the total professing the faith of Gautama numbering 351,000 in 1901. Hindus and Muhammadans are confined to the towns, and number only 2,600 each, and the total of Animists is 8,600. Burmese is the language of 94 per cent. of the people, but Karen and Chin are spoken in the hilly areas.

Race and occupation.

Burmans form 93 per cent. of the population, and are found everywhere except in the hills. There are 4,200 Karens, who nearly all retain their dialect, and 1,200 Shans, of whom rather more than half still talk their own vernacular. The Chins, living for the most part to the west of the Irrawaddy, number 11,600, and about 60 per cent. speak the Chin language. They are said all to profess Buddhism (though the census figures do not bear out this assertion), and those near the Burmese villages have adopted Burmese dress and dropped their own language. The number of people dependent on agriculture in 1901 was 251,300, or less by 7 per cent. than the corresponding total in 1891. Of these, 17,600 were supported by *taungya* or shifting cultivation.

Christian missions.

There are only 481 Christians, half of whom are Baptists. The American Baptist Mission started work at Prome town in 1854, and now has centres at Prome, Paungde, and Inma. The Anglican and Roman Catholic Churches are represented at Prome.

General agricultural conditions.

The rainfall, though light, can on the whole be depended upon. The principal rice-tracts are in the Hmawza township, the middle of the Thegon and Paungde townships, and the Shwedaung township. In the rest of the District *taungya*, or shifting hill cultivation, is prevalent; in fact, the percentage of *taungya* cultivation is higher in Prome than in any other District in the Pegu and Irrawaddy Divisions. Field-work begins in the hot season with the carrying of manure to the

ground. The custom of stabling the cattle provides the husbandman with a large supply of cow-dung, which is mixed with paddy husk before use. It is now usual to manure both nurseries and fields. The nurseries are sown broadcast and the rice is transplanted, not sown broadcast on the fields, as in Pegu District. For transplantation, and frequently for reaping, the able-bodied women work in gangs under chosen leaders. The custom of hiring a number of men for a fixed sum to reap the whole crop is unknown; in fact the rates of pay would not attract Burmans or natives of India from other Districts. The threshing is done in the villages, an arrangement which dispenses with the necessity for huts in the fields. Owing to the scarcity of cultivable waste the rent paid by tenants is exceptionally high; in certain parts of the District as much as one-half of the crop is given to the landlord, who pays the revenue. Famine is unknown, in spite of the comparative dryness of the climate.

Chief agricultural statistics and principal crops.

The cultivated area has increased from 372 square miles in 1880–1 to 437 square miles in 1891, and 500 square miles in 1903–4. The main agricultural statistics for 1903–4 are shown below, in square miles:—

Township.	Total area.	Cultivated.	Irrigated.	Forests.
Prome . . .	9	2	...	2,005
Paukkaung . .	694	32	5	
Hmawza . .	273	125	37	
Paungde . .	379	86	11	
Thegon . .	241	93	2	
Shwedaung . .	300	87	...	
Padaung . .	1,019	75	6	
Total	2,915	500	61	2,005

More than a hundred varieties of rice are recognized, and this crop covered 428 square miles in 1903–4. Besides the ordinary cold-season crop a certain amount of *mayin*, or hot-season rice, is grown. The area under rice has increased by nearly 40 per cent. in the twenty years ending 1903. In 1903–4 gardens covered 33 square miles, and 3,700 acres were cultivated with tobacco on the banks and islands of the Irrawaddy. During the same year cotton was grown on the hills on 1,600 acres, as compared with 3,000 acres in 1882. Prome is famous for custard-apples, which are planted largely on the hill-slopes facing Prome town.

Improvements in

No improvements in cultivation are noted. Havana tobacco was experimentally introduced in 1903, but beyond this no

agricultural practice. new crops of importance have been tried. Without being actually prosperous, the cultivators are, on the whole, fairly well-to-do, and till recently have not resorted to Government for loans. No agricultural advances were granted during the years 1890–1900, but a beginning was made with loans to the extent of Rs. 1,400 in 1901–2, and Rs. 7,440 in 1903–4.

Cattle, &c. There are plenty of cattle for ploughing, which are bred and trained in the District. Ponies, sheep, and goats are not bred locally. The cattle are kept under the houses and stall-fed. It has been found that there is little need for grazing-grounds, and such as exist are but little used. This accounts for the unusually healthy state of the cattle, for there is little doubt that large grazing-grounds tend to spread epidemics.

Irrigation and fisheries. No large irrigation works have been constructed, but a few minor works exist in the Padaung and Paukkaung townships. The Inma Lake, an important fishery, is the only large natural reservoir. In all, 61½ square miles were irrigated in 1903–4, of which nearly 9 were supplied from private canals. Of the total, about 38 square miles are situated in the Hmawza township. The fisheries are comparatively unimportant, producing a revenue of Rs. 38,000 in 1903–4.

Forests. The forest tracts fall naturally into two groups: those to the west of the Irrawaddy on the Arakan Yoma, and those to the east of the river on the Pegu Yoma. The latter can be subdivided again into two groups: those lying in the drainage of the Nawin in the north, and those in the drainage of the Shwele in the south. The former were worked to excess by the Burmans, but natural obstructions near the mouth of the Shwele fortunately preserved the Shwele forests from the indigenous methods of timber extraction. The Shwele has now been cleared, and the timber is worked departmentally by the Forest officials. The hill-slopes contain, besides teak, other valuable timbers, such as *pyingado* (*Xylia dolabriformis*), *padauk* (*Pterocarpus indica*), and *pyinma* (*Lagerstroemia Flos Reginae*). Between the hills and the river are large stretches of *in* and cutch forests, containing, in addition to these trees (*Dipterocarpus* and *Acacia Catechu*), useful growths such as *thitya* (*Shorea obtusa*), *thitsi* (*Melanorrhoea usitata*), and *ingyin* (*Pentacme siamensis*). The total area of 'reserved' forests is 538 square miles, and an area of 169 square miles is under settlement with a view to reservation. The forest receipts in 1903–4 were 9·7 lakhs. There are 1,467 square miles of unclassed state forest.

Minerals. No discoveries of metal or precious stones have so far been

made. Large quantities of laterite and stone ballast are extracted from a hill near Hmawza by the Burma Railways Company, and small outcrops of coal have been met with in the Padaung township. Prospecting licences have been taken out for petroleum, but there has been no success so far.

Arts and manufactures.

Cotton and silk-weaving are carried on throughout the District, the former for the most part as a subsidiary occupation. Silk-weaving is mainly pursued in the town of Shwedaung and in the neighbouring circles, where, in fact, every other house has a loom. The census returns in 1901 showed that there were more silk-weavers in Prome than in any other District of Burma, with the single exception of Mandalay. Cotton looms are plentiful throughout the country, and in most cases the family loom provides the members of the household with clothing. The only exceptional industry is sericulture, which was probably imported from China. It is carried on largely by the Yabein tribe, who live apart in their own villages, their occupation being offensive to the strict Buddhist. The method of manufacture is crude in the extreme. The eggs are hatched in a coarse cloth, and the worms swept into a tray and fed on mulberry leaves. After 30 days or so the larvae begin to spin, and when ready to commence this process, are picked out with the hand, and thrown on to the cocooning tray, on which a plaited bamboo ribbon, about two inches wide, is coiled. To this ribbon the larvae attach their cocoons, and these, when ready, are torn off and put to simmer in a common pot. The filaments are then picked up with a fork and reeled on a bamboo reel suspended over the pot. The thread thus produced is coarse and dirty, and mixed with pupae and other refuse. The price of raw silk at the river-side markets is Rs. 5 to Rs. 6 a pound. Other manufactures are ornamental boxes for keeping palm-leaf books, coarse brown sugar, and cutch from the forest-covered townships. The *Acacia Catechu* is common, and in 1901 Prome returned a larger number of cutch-workers than any other District of Burma. In Prome town there is a steam rice-mill, employing 60 hands, and a steam saw-mill, employing 47; but on the whole, factory industries are poorly represented.

Commerce.

The main exports are paddy and timber. Paddy is sent by the railway to the south, and by the Irrawaddy steamers to Mandalay and intermediate towns, while teak from the Pegu Yoma is floated down the river in large quantities to Rangoon. A small amount of cotton is exported to Rangoon after a partial cleaning at Prome.

The principal imports are piece-goods, hardware, European goods, *ngapi* and salted fish from Rangoon and other parts of the delta. The trade of Prome has declined somewhat since the opening of the Toungoo-Mandalay railway, as, previous to this, goods for Upper Burma were sent largely by rail to Prome, and thence by steamer. This is still the route, however, for the passenger and mail traffic between Rangoon and a number of up-river stations, so that there is still a certain amount of transhipment business at Prome.

Communications. The Rangoon-Prome railway enters the District 5 miles from Paungde in the south, and runs through the middle of the Paungde, Thegon, and Hmawza townships to Prome, the terminus of the line. It has stations at Paungde, Padigon, Thegon, Sinmizwe, and Hmawza.

The Irrawaddy, flowing from north to south through the District, gives access to the Hmawza, Shwedaung, and Padaung townships; and an excellent system of metalled roads connects the remoter places in the District with the landing-places on the river or the stations on the railway. The Irrawaddy Flotilla Company's steamers provide a daily service from Prome to Thayetmyo, and from Prome to Henzada, and a tri-weekly service from Prome to Rangoon, and from Prome to Mandalay, stopping at river-side stations.

There are 91 miles of metalled and 116 miles of unmetalled roads maintained from Provincial funds. The main routes are the Prome-Rangoon road (mile 177 to mile 140) through Shwedaung and Paungde, and the road from Prome to Paukkaung, both of which are metalled and bridged. Unmetalled roads lead northwards into Thayetmyo District, and westwards over the Arakan Yoma to Taungup in Sandoway District. A number of footpaths are bridged and embanked, but are not available for wheel-traffic. The most important of these is from Shwedaung to Nyaungzaye on the Irrawaddy. Roads maintained from Local funds connect the more important villages. Of the District cess fund roads, 7 miles are metalled and 84½ unmetalled.

District subdivisions and staff. The District is divided into three subdivisions: Prome, containing the townships of PROME, PAUKKAUNG, and HMAWZA; Paungde, containing the townships of PAUNGDE and THEGON; and Shwedaung, containing the townships of SHWEDAUNG and PADAUNG. The executive staff is of the usual kind, the Paungde subdivision being generally in charge of an Assistant Commissioner. There are 669 village headmen. At headquarters there are, besides the Deputy-Commissioner, a treasury

officer, an *akunwun* (in charge of the revenue), and a superintendent of land records, with a staff of 4 inspectors and 34 surveyors. The District forms a subdivision of the Tharrawaddy Public Works division, and a Forest division with a subdivisional officer at Paungde.

Civil justice and crime.

Prome, with Tharrawaddy, forms the jurisdiction of a Divisional as well as of a District Judge: the District Judge has his head-quarters at Tharrawaddy, the Divisional Judge at Prome. There are, besides the Divisional and District Judges, two civil judges, one at Prome, presiding over the Prome and Hmawza township courts, the other at Paungde, presiding over the Paungde and Thegon township courts. These judges have Small Cause Court jurisdiction up to Rs. 50 in the Prome and Paungde municipalities respectively. The other township courts are presided over by the township officers. In addition to the District, subdivisional, and township magistrates there is an additional magistrate at Paungde. The District is noted for cattle-thefts, but this form of crime is decreasing slowly, though in 1901 the number of convictions was as large as 411. Cattle-theft is kept down as much as possible by active cooperation between the village headmen, the magistrates, and the police, and by the patrolling by military police of the roads most used by cattle-thieves.

Revenue administration.

Previous to the British occupation the principal sources of revenue were land tax and a form of income tax. The latter was assessed by the local officers, who were guided mainly by the property of the person assessed, but no fixed rates were laid down. It would appear that in portions of the District half the produce was demanded from the cultivators. After annexation efforts were made to distribute the land tax properly, and acreage rates were introduced in 1862 for rice lands. There was a settlement of the richest portion of the District in 1867–8, and again in 1884–5; and in 1900–1 a revision of the rates fixed in 1884–5 produced an increase of over a lakh, or nearly 30 per cent. The present rates on rice land vary from 6 annas to Rs. 2–6–0 an acre, and on gardens from 6 annas to Rs. 3. The average area of a holding at present is $5\frac{1}{2}$ acres, compared with 7 acres in 1881.

The steady growth of the revenue during the past twenty years may be gathered from the table on the next page, which gives the figures in thousands of rupees. The total for 1903–4 includes 3 lakhs from capitation tax and 3·8 lakhs from excise.

Local and

There is a District cess fund, administered by the Deputy-

municipal government. Commissioner for the up-keep of roads and other local necessities. Its income (composed for the most part of a cess of 10 per cent. on the total land revenue) was Rs. 71,600 in 1903-4, and its expenditure Rs. 64,000, of which nearly one-third was devoted to public works. There are two municipalities: that of PROME, constituted in 1874, and that of PAUNGDE in 1884. SHWEDAUNG has a town committee, which was formed in 1882.

	1880-1.	1890-1.	1900-1.	1903-4.
Land revenue . .	2,88	3,16	3,92	4,81
Total revenue . .	7,44	9,06	9,49	13,00

Police and jails. The strength of the police is 406 of all ranks, under the orders of the District Superintendent. An Assistant Superintendent is in charge of the police in the Paungde subdivision. The force consists of 3 inspectors, 2 chief head constables, 6 head constables, 41 sergeants, and 352 constables, distributed in fourteen police stations and four outposts. The military police number 166 of all ranks, 66 being stationed at Prome town, the rest distributed in the other six townships. The District possesses two jails, at Prome and Paungde, with accommodation for 325 and 177 prisoners respectively. The Paungde jail was built in 1900, taking the place of the old reformatory school, which had been used as a jail since 1896.

Education. The percentage of literate persons in 1901 was 45 in the case of males, 4 in that of females, and 24 in the case of the two sexes together. The number of pupils was 8,946 in 1881, 8,851 in 1891, 10,201 in 1901, and 10,166 in 1903-4, including 1,093 girls. In the last year there were 19 secondary, 126 primary, and 428 elementary (private) schools in the District. The most important institutions are the schools at Prome and Paungde. Judging from the attendance and from the passes obtained, female education is making a steady advance. The total expenditure on education in 1903-4 was Rs. 44,600, municipal funds contributing Rs. 12,900, and Provincial funds Rs. 8,800, while Local funds provided Rs. 10,000 and fees Rs. 12,900.

Hospitals and dispensaries. The District contains hospitals at Prome, Paungde, and Shwedaung, with 78 beds. In 1903 the number of cases treated was 30,179, including 1,011 in-patients, and 559 operations were performed. Towards a total expenditure of Rs. 13,800, municipal funds contributed Rs. 7,600, and Local funds Rs. 4,900.

Vaccination is compulsory only within municipalities, but the estimated percentage of protected persons in the District as a whole is fairly high. In 1903-4 the number of persons successfully vaccinated was 17,490, representing 48 per 1,000 of population. At one time small-pox was a scourge of particular virulence in Prome town, but vaccination has done much to reduce the ravages of this disease. Vaccination.

[W. E. Lowry, *Settlement Report* (1902).]

Prome Subdivision.—North-eastern subdivision of Prome District, Lower Burma, containing three townships, PROME, HMAWZA, and PAUKKAUNG.

Prome Township.—Township of Prome District, Lower Burma, consisting wholly of the municipality of Prome, with an area of 9 square miles. The non-municipal revenue raised in the township in 1903-4 amounted to Rs. 1,42,000, the greater part being excise. Land tax, levied in lieu of capitation tax, contributed Rs. 4,000. The cultivated area within the limits of the township fell from 3 square miles in 1890-1 to 2 square miles in 1903-4, and the agricultural population from 10,600 to 2,100 between the years 1891 and 1901.

Paukkaung.—Eastern township of the Prome subdivision of Prome District, Lower Burma, lying between 18° 48′ and 19° 11′ N. and 95° 21′ and 95° 53′ E., with an area of 694 square miles. The population in 1901 was 29,797, including nearly 5,000 Chins, and in 1891 was 31,995, so that the decrease has been 7 per cent. in ten years. The eastern half of the township is covered by the forests of the Pegu Yoma, and the density is low. There are 241 villages, the head-quarters being Paukkaung (population, 1,224), which is connected with Prome by a good road. The area cultivated in 1903-4 was 32 square miles, paying Rs. 15,000 land revenue. The total revenue for the same year was Rs. 88,000.

Hmawza.—Western township of the Prome subdivision of Prome District, Lower Burma, lying in flat well-populated country between 18° 39′ and 19° 6′ N. and 95° 9′ and 95° 36′ E., with an area of 273 square miles. The population decreased from 78,962 in 1891 to 68,591 in 1901, but still averages more than 250 persons per square mile. It is practically entirely Burman. There are 447 villages, the head-quarters being at Hmawza (population, 580), situated on the railway 5 miles east of Prome. In 1903-4 the area cultivated was 125 square miles, paying Rs. 1,25,000 land revenue. The township was formerly known as the Mahāthaman township.

Paungde Subdivision. — South-eastern subdivision of Prome District, Lower Burma, containing two townships, PAUNGDE and THEGON.

Paungde Township.—South-eastern township of the Paungde subdivision of Prome District, Lower Burma, lying between 18° 26′ and 18° 52′ N. and 95° 23′ and 95° 50′ E., with an area of 379 square miles. Except in the neighbourhood of the Pegu Yoma in the north-east, the township is flat and thickly populated. The population increased from 56,430 in 1891 to 60,604 in 1901. There are 250 villages and one town, PAUNGDE (population, 11,105), the head-quarters. The area cultivated in 1903–4 was 86 square miles, paying Rs. 86,000 land revenue.

Thegon.—North-western township of the Paungde subdivision of Prome District, Lower Burma, flat, fertile, and thickly populated, lying between 18° 25′ and 18° 46′ N. and 95° 17′ and 95° 34′ E., with an area of 241 square miles. The population, unlike that of several townships in the District, is on the increase. It rose from 53,107 in 1891 to 60,982 in 1901. There are 296 villages, the head-quarters being at Thegon (population, 1,017), situated on the railway, 19 miles south-east of Prome town. The township contains a large lake called the Inma, which is 10 miles long and 4 miles broad, and 12 feet deep in the rains. The area cultivated in 1903–4 was 93 square miles, paying Rs. 97,000 land revenue.

Shwedaung Subdivision.—Western subdivision of Prome District, Lower Burma, containing two townships, SHWEDAUNG and PADAUNG.

Shwedaung Township.—Township in the Shwedaung subdivision of Prome District, Lower Burma, lying along the eastern bank of the Irrawaddy, between 18° 18′ and 18° 48′ N. and 95° 4′ and 95° 21′ E., with an area of 300 square miles. The population was 66,388 in 1891, and 66,743 in 1901, but the agricultural population increased from 25,700 to 36,300. There are 311 villages and one town, SHWEDAUNG (population, 10,787), the head-quarters. The area cultivated in 1903–4 was 87 square miles, paying Rs. 90,000 land revenue.

Padaung.—Township in the Shwedaung subdivision of Prome District, Lower Burma, lying to the west of the Irrawaddy, separating it from the Arakan Yoma, between 18° 21′ and 18° 57′ N. and 94° 41′ and 95° 13′ E., with an area of 1,019 square miles. The population was 52,073 in 1891 and 51,712 in 1901, including about 6,000 Chins, practically all of whom

reside in villages on the slopes of the Arakan Yoma. There are 216 villages, the head-quarters being at Padaung (population, 2,260), on the right or west bank of the Irrawaddy. A good deal of cutch is manufactured, but only a small percentage of the land is under cultivation, owing to its hilly nature. In 1903–4 the area cultivated was 75 square miles, paying Rs. 64,000 land revenue.

Paungde Town.—Head-quarters of the subdivision of the same name in Prome District, Lower Burma, situated in 18° 30′ N. and 95° 31′ E., on the Rangoon-Prome railway, 130 miles from Rangoon and 32 miles by road from Prome. The population in 1901 was 11,105, and has steadily increased since 1872. Paungde was constituted a municipality in 1884. The municipal income and expenditure during the ten years ending 1900 averaged between Rs. 31,000 and Rs. 32,000. In 1903–4 the income was Rs. 42,000, the chief sources of revenue being tolls on markets and slaughter-houses (Rs. 26,000) and house tax (Rs. 4,300); and the expenditure was Rs. 37,000, the principal items being roads (Rs. 6,500) and conservancy (Rs. 4,200. The town contains a jail, a hospital, and a middle school. The Provincial reformatory was removed from Paungde to Insein in 1896, the premises being converted into a jail, and in 1900 new jail buildings were erected. The middle school, established in 1875, has 130 pupils.

Prome Town.—Head-quarters of the District of the same name in Lower Burma, situated in 18° 49′ N. and 95° 13′ E., on the eastern bank of the Irrawaddy, at the mouth of the Nawin, 161 miles by railway from Rangoon. The population, according to the last four enumerations, was as follows: (1872) 31,157, (1881) 28,813, (1891) 30,022, and (1901) 27,375. Of the population in 1901, Buddhists numbered 24,200, and Musalmāns and Hindus about 1,400 each. The number of Buddhists was approximately 3,000 lower than in 1891, whereas that of the Indian religions was about the same. It will thus be seen that the diminution in the past decade, for which various reasons have been assigned, is confined to the indigenous population. The town is well laid out, having been almost entirely destroyed in 1862; and is divided into several quarters, Nawin on the north, Ywabe on the east, Sinzu on the south, and Shweku and Sandaw in the centre. In a line skirting the high river bank are the municipal school, the court-houses, the church, and the telegraph office. The Strand road traverses the town from north to south, and from it well-laid roads run eastwards into the urban areas. North of Sinzu is

the famous Shwesandaw pagoda, and in the Nawin quarter are the markets. The municipal water-works, opened in 1885, supply the town with water from the river.

The date of the foundation is not known. The original capital of the kingdom of Prome was Tharekhettra, 5 or 6 miles inland. This was the ancient city, no doubt, which the early histories state was destroyed by the Talaings in the eighth century; and it was probably after the reigning dynasty had gone northwards to retrieve their shattered fortunes in Pagan that the remnant of the Pyus chose as their capital the existing town of Prome, destined in after time to be one of the chief centres round which the early peoples of the country struggled for the mastery in Burma. Prome was the scene of warlike operations in the sixteenth and eighteenth centuries, and its occupation and defence and the subsequent defeat of the Burmans near the town by the British in 1825 were among the conspicuous incidents of the first Burmese War. In the second Burmese War it was captured and occupied temporarily by Commander Tarleton, and three months later in the same year (1852) General Godwin's advance up the river placed the town in the occupation of the British, out of whose hands it has not passed since.

The principal industries are the manufacture of silk cloth, large gilt boxes for palm-leaf books, and lacquer-ware. A saw-mill and a rice-mill are at work in the town, but no other factories. Cotton, both local produce and imported from Upper Burma, is partially cleaned at Prome before export to Rangoon. The through trade has decreased since the opening of the Toungoo-Mandalay railway, goods being no longer sent for transhipment to the same extent as formerly.

Prome was constituted a municipality in 1874. The income during the ten years ending 1900 averaged Rs. 1,23,000, and the expenditure Rs. 1,20,000. In 1903–4 the receipts were Rs. 1,48,000, the chief sources being tolls on markets and slaughter-houses (Rs. 63,000), house and land tax (Rs. 12,000), and water rate (Rs. 17,000). The expenditure in the same year was Rs. 2,43,000, the chief heads being drainage (Rs. 16,000), conservancy (Rs. 40,000), and roads (Rs. 19,000). The amount devoted to the water-works was Rs. 82,000.

The municipality maintains a high school with 360 pupils, and in 1900 new school buildings were erected at a cost of Rs. 32,000. The annual municipal contribution towards education is Rs. 7,000. The hospital, maintained largely from municipal funds, has accommodation for 42 in-patients. Four

beds are specially set apart for eye-diseases, which are exceptionally prevalent in Prome.

Shwedaung Town.—Head-quarters of the subdivision of the same name, Prome District, Lower Burma, situated in 18° 42′ N. and 95° 13′ E., on the Rangoon-Prome road, 8 miles due south of Prome town. Population (1901), 10,787. Shwedaung is administered by a town committee constituted in 1882. The income of the town fund in 1903–4 was Rs. 24,000 and the expenditure Rs. 29,000. There is a hospital in the town with twenty-four beds. A considerable amount of silk is manufactured, almost every house in the town having its loom.

IRRAWADDY DIVISION

Irrawaddy Division.—A Division of Lower Burma, occupying the south-west corner of the Province, between 15° 40′ and 18° 31′ N. and 94° 11′ and 96° 6′ E. On the north it is bounded by the Prome District of the Pegu Division; on the east by the Tharrawaddy and Hanthawaddy Districts of the same Division; on the south by the Bay of Bengal; and on the west by the Bay of Bengal and the Sandoway District of the Arakan Division. With the exception of the Arakan Yoma running down the western border, the whole Division is an alluvial plain, watered by a maze of rivers and creeks, all taking off from the Irrawaddy. It is divided into five Districts: Henzada in the north, Ma-ubin in the east, Pyapon in the south-east, Myaungmya in the south, and Bassein in the south-west.

The population of the Division was 680,315 in 1872, 989,978 in 1881, 1,300,119 in 1891, and 1,663,669 in 1901. The greater part of this very large increase is due to the steady flow of immigration from India, and also from the Districts of Upper Burma. The distribution of population in 1901 [1] is given in the table below:—

District.	Area in square miles.	Population in 1901.	Land revenue in 1903-4, in thousands of rupees.
Bassein . . .	4,127	391,427	13,79
Myaungmya . .	2,663	278,119	11,71
Ma-ubin . . .	1,641	283,122	9,53
Pyapon . . .	2,137	226,443	12,27
Henzada . . .	2,870	484,558	12,40
Total	13,438	1,663,669	59,70

The Division contains 7,185 villages and 16 towns. The head-quarters are at BASSEIN (population, 31,864), which enjoys easy railway communication with Henzada, and river communi-

[1] Since the Census of 1901, the two former Districts of Myaungmya (area, 2,970 square miles; population, 303,274) and Thongwa (area, 3,471 square miles; population, 484,410) have been distributed into the three Districts of Myaungmya, Ma-ubin, and Pyapon, as shown in the table.

cation with the other District head-quarters. The other chief towns are HENZADA (population, 24,756), and YANDOON in Ma-ubin District (population, 12,779). Bassein is a town of considerable historical importance; but the Division as a whole never formed an independent political unit, and has taken no very prominent part in the events that have gone to mould the destinies of the people of Burma. The greater part of the population are Burmans, of whom there were 1,250,821 in 1901. Karens are well distributed throughout the Division, and in the same year numbered 299,119. The Pwo and Sgaw Karens are most numerous in Bassein and Myaungmya District, and in 1901 showed totals of 142,495 and 52,072 respectively. Talaings (34,394 in number) are strongest in Ma-ubin and Pyapon Districts and weakest in Henzada. A certain number of Arakanese, Chins, and Shans are also found. Chinese in 1901 numbered 8,070, and the Indian population consisted of 30,639 Hindus and 18,944 Musalmāns. The number of Christians (54,823) is large, owing to the numerous Karen population.

Bassein District.—District of the Irrawaddy Division, Lower Burma, lying between 15° 50′ and 17° 30′ N. and 94° 11′ and 95° 28′ E., with an area of 4,127 square miles. It forms an irregular wedge-shaped strip of coast land and delta country, narrowing from north to south, in the extreme south-west corner of the Province. It is bounded on the north by Henzada and Sandoway Districts; on the east by Ma-ubin and Myaungmya Districts; and on the south and west by the Bay of Bengal, which curves round its southern and western edges at the elbow formed by Pagoda Point. The District is divided into unequal parts by the Arakan Yoma, which enters Bassein at its north-western corner, and runs down its western side at no great distance from the sea. The main portion lies to the east of this range, consisting of a flat alluvial plain, the northern end of which is rich rice land. Farther south, between the Ngawun and Dagā rivers, it is flooded and poor. To the east of the Dagā and southwards towards Bassein town the land is slightly higher and more fertile. To the west of the Ngawun, as far as the bifurcation of the Dagā, the land is flooded and generally uncultivable. Below that point it is higher and of fair quality, while south of the town of Bassein it is typically deltaic, intersected by innumerable tidal creeks, marshy, and covered with mangrove jungle, with some stretches of rice land here and there. In the south the coast-line consists for the most part of a gently shelving sandy beach, backed by

Boundaries, configuration, and hill and river systems.

swampy forest land; in the west beyond Pagoda Point, where the hills enter the sea abruptly, the coast is rocky and difficult of approach. With the exception of the Arakan Yoma, which here is comparatively low, there is no high land in the District. The whole face of the country is intersected by tidal channels, but they are for the most part unimportant waterways. The principal river is the Ngawun (or BASSEIN), which, leaving the Irrawaddy a short distance above Henzada, pursues a course almost due south through the whole length of the District, till it falls into the sea at Hainggyi. Its chief tributaries are the Dagā, joining it about 14 miles north of Bassein, and the Panmawadi, whose waters fall into it some 28 miles south of that town. The Bassein river has two mouths, but the eastern branch is silted up with sand and is useless for navigation. The western or main branch, on the other hand, is easily navigable by ocean-going vessels of a draught up to 27 feet, and is the main waterway to the town of Bassein.

Numerous stretches of water are found in the District, but the one real lake, called the Inye, has a circumference of 7 miles, and averages 15 feet in depth in the dry season. It is situated in the Kyonpyaw township, about 4 miles from Kyonpyaw in the north-east of the District. Islands are plentiful in the lower reaches of the Bassein river; but the only two deserving of special mention are Hainggyi or Negrais, near Pagoda Point, where the first British trading settlement in Burma was started, and DIAMOND ISLAND, called by the Burmans Thamihla ('beautiful daughter'), a low wooded islet about a square mile in area at the very mouth of the river.

Geology. The soil of a portion of the northern part consists of the usual agglomeration of clay and silt deposit common to alluvial rice-growing plains. North of Bassein town and east of Ngaputaw considerable beds of laterite are met with, covered in places with sandy deposits. On the west coast a remarkable patch of calcareous sandstone occurs. The Nummulitic or Eocene group of rocks is well developed; in the Yoma and in the south these have been termed the Negrais beds. Subordinate to the sandstone an irregular bed of conglomerate occurs, which is, however, marked only near Ywatpa, where there is a so-called mud volcano. This is really only as mall vent discharging marsh-gas, connected geologically, no doubt, with the mud volcanoes of Arakan. In the south, at Tonbo and Kyaukthinbaw, limestone of the very best quality is found. The supply is practically inexhaustible, the locality is convenient for working, and in consequence this area has been largely drawn

on by the railway for ballasting the lately completed line from Rangoon to Bassein. Soapstone in small quantities is found in the Arakan Yoma, chiefly on the western slopes.

The botany of Bassein is similar to that of HANTHAWADDY DISTRICT. Large areas of mangrove swamp are found near the rivers, and inland are evergreen tropical forests. Palms of various kinds are common. The main varieties of timber trees are enumerated under the heading of Forests. Botany.

Tigers are scarce; but elephants, *sāmbar*, bison, leopards, and bears are fairly common in the western tracts towards the Yoma. The rhinoceros is nearly extinct, being ruthlessly hunted for its blood, which is accounted a valuable curative medium by the Burmans, among whom it sells for its weight in silver. In the less-developed parts the smaller kinds of deer and also wild hog were plentiful, but are being rapidly exterminated with nets. Crocodiles are found in a large number of the tidal creeks, and there are rich turtle-beds to the south near the coast. Fauna.

The climate is rather relaxing, though the heat in summer is tempered to some extent by the strong sea-breezes which spring up in the afternoon. The mean of the maximum temperatures in the hotter months is generally about 95°, that of the minimum about 75°. Climate, temperature, and rainfall.

The rainfall is heavy, though, owing to the shelter afforded by the Arakan Yoma, it is not to be compared in volume with what the adjoining District of Sandoway receives. The annual average at the District head-quarters for the ten years ending 1904 has been 113 inches, while at the other recording stations it is highest at Ngaputaw in the south (129 inches), and lowest at Kyonpyaw in the north-east (88 inches).

The great cyclone of May 6, 1902, which affected the whole Burma coast, did some damage in the south and west of the District. Some of the central portion is annually inundated, but serious floods are not known.

Little is known of the early history of the District. Its Burmese name is Pathein, though how and when this was corrupted into Bassein is far from clear. In old Talaing histories the thirty-two cities of Bassein are mentioned in A.D. 625 as forming part of the newly established kingdom of Pegu. For many centuries after this Bassein was the scene of constant struggles between the Talaings and the Burmans. The port of Bassein has from early days been a trading centre of some importance. In 1687, after two unsuccessful attempts to obtain a footing on the Irrawaddy delta, the East India Company History and archaeology.

occupied Negrais, an island, now known as Hainggyi, at the mouth of the Bassein river, and a trading settlement was established there. In 1757 the Company obtained from Alaungpayā, the king of Ava, who two years previously had seized Bassein from the Peguans, the permanent cession of Negrais and of a piece of land at Bassein, in return for aid promised against the enemies of the Burmans. On October 5, 1759, however, nearly all the Europeans in the settlement were treacherously murdered by the Burmese officials, on suspicion of having helped the Talaings (or Peguans) against Alaungpayā. The brick walls of the factory are still standing. Negotiations in 1801–2 to regain Negrais were fruitless; and the British envoy was treated with characteristic insolence, the king of Ava, Bodawpayā, being then at the summit of his power. But in 1824, during the first Burmese War, Bassein was taken and held as a pledge by the British till the evacuation of Pegu in accordance with the terms of the Treaty of Yandabo. During the second Burmese War, in 1852, the town was stormed by the British troops, and finally occupied. Shortly after the annexation it was proposed to move the District head-quarters from Bassein to what was thought a more suitable site nearer the mouth of the Bassein river; but the beginnings of the new civil station, which was to have been called Dalhousie, were wrecked by a cyclone in 1856–7, and the scheme was abandoned. Since 1854, when organized crime was checked by Major Fytche, the District has been quiet, except during the Bogale rebellion, which broke out simultaneously with the guerrilla war in Upper Burma (1886). The District as at present constituted has, so far as its external boundaries are concerned, been in existence since 1893, when a portion of its area was added to the newly created District of Myaungmya.

The most important shrines are the Shwemoktaw, the Mahābawdi, the Tagaung, and the Shwezigon pagodas in the town of Bassein itself; the Shinthedat pagoda at Kanni; the Dipayon pagoda at Mezali; and the Hmawdin pagoda on a sea-girt eminence at the southernmost extremity of the District.

The people.

The population at the last four enumerations was as follows: (1872) 202,428, (1881) 268,169, (1891) 320,973, and (1901) 391,427. The principal statistics of area and population in 1901 are shown in the table on the following page.

The growth of population has been rapid, amounting to 45 per cent. since 1872; but it is likely to be less marked in future, as the District is said to have fewer attractions for

immigrants than the adjoining delta areas. Except in the Thabaung and Ngaputaw townships, where there are hilly tracts, the density is high. There are only two towns of over 5,000 inhabitants, BASSEIN, the head-quarters of the District, and NGATHAINGGYAUNG. The population is chiefly Buddhist (348,100, or 89 per cent.). Christians come next with 22,400; Hindus number 12,600, and Musalmāns 6,400.

Township.	Area in square miles.	Number of		Population.	Population per square mile.	Percentage of variation in population between 1891 and 1901.	Number of persons able to read and write.
		Towns.	Villages.				
Bassein	563	1	518	104,647	186	+ 11	26,262
Thabaung	1,118	...	440	47,802	43	+ 23	12,400
Ngaputaw	1,439	...	244	37,126	26	+ 25	9,444
Ngathainggyaung	345	1	387	64,891	188	+ 15	20,205
Kyonpyaw	292	...	466	70,010	240	+ 40	15,462
Kyaunggon	370	...	562	66,951	181	+ 29	14,671
District total	4,127	2	2,617	391,427	95	+ 22	98,444

Burmese is spoken by 287,300 persons and Karen by 84,100, a figure which indicates that nearly all the Karens use their own vernacular. Though Talaings are numerous, the Talaing language appears to be hardly spoken at all in Bassein, while in the neighbouring District of Myaungmya it is still the speech of one Talaing out of four.

Race and occupation.

Burmans numbered 271,800 in 1901; Karens, 85,300 (mostly Pwos); Arakanese, 6,300; Talaings, 4,700. There are 1,200 Chinese, only 280 of whom are females. More than half the Musalmāns and nearly two-thirds of the Hindus live in Bassein town. The agricultural population in 1901 was returned at 259,100, or 66 per cent. of the total.

Christian missions.

The large Christian population (more numerous than in any District of the Province except Toungoo) is chiefly due to the Karen converts of the American Baptist Mission, of whom 13,890 returned themselves as Baptists in 1901, and who also probably formed a large proportion of the 5,409 Christians who returned no denomination. Roman Catholics and Anglicans (principally natives) number more than 1,200 each. The total of native Christians was 22,000. The American Baptist Mission works among both the Karens and the Burmans. The Roman Catholics have three mission stations in the District.

General agricultural conditions.

The conditions of agriculture are generally uniform. The richest land lies to the north and north-east. In the north

the soil is composed of a rich silt-impregnated loam, protected from inundation by an extensive system of Government embankments, while in the north-east the land consists of new clearings of rich tree-jungle. The southern portion of the tract north of the Dagā is liable to floods caused by the back-wash from the Ngawun. South of the Dagā the land is slightly higher and consequently of poorer quality, but it falls rapidly south of the town of Bassein. The Ngaputaw township, except for some high ground in the Thongwa circle, is flat and marshy, the soil is thin, and the surface of the land is intersected by tidal creeks. On the west bank of the Ngawun the lower levels are as a rule flooded, owing to the embankment on the east bank of that stream; and the ground gradually rises from the river to the hills, where cultivation is found only in minute patches on the gentler slopes, or in the valleys between the hill ranges. About 37 miles of the Ngawun embankment lie within the limits of the District. This work, with its continuation northward in Henzada, forms a raised embankment 151 miles in length, protecting from inundation about 1,600 square miles of country.

The methods of cultivation exhibit little variety in the different tracts. Ploughing is performed with a rough wooden plough, consisting of a transverse bar from 7 to 8 feet long, with seven, eight, or nine pointed wooden teeth fixed in it. This is drawn in every direction across the field, more or less frequently according to the quality of the soil. The rice is then ordinarily transplanted from the nurseries in which it has been raised. In the Ngaputaw township, however, the grain is generally sown broadcast, the soil here being poorer, and the cost of labour high. In the flooded portions of the District transplanting is not possible till October, and the success of the crop then altogether depends on the sufficiency or otherwise of the later rains.

Chief agricultural statistics and principal crops.

The main agricultural statistics for 1903-4 are shown below, areas being in square miles:—

Township.	Total area.	Cultivated.	Irrigated.	Forests.
Bassein	563	244	...	284
Thabaung	1,118	81	1·3	
Ngaputaw	1,439	107	...	
Ngathainggyaung	345	136	0·3	
Kyonpyaw	292	171	0·3	
Kyaunggon	370	120	0·1	
Total	4,127	859	2	284

In the same year 802 square miles were under rice (*kaukkyi*). *Mayin*, or hot-season rice, is grown, but only to a small extent. Garden cultivation covered 41 square miles, of which the plantain groves of the Kyonpyaw township on the banks of the Dagā constitute about a third. The *dani* palm is cultivated in the Ngaputaw and Bassein townships on 2,100 acres, and tobacco on 2,700 acres in the Ngathainggyaung township in the north of the District. The size of the average agricultural holding is about 18 acres.

Improvements in agricultural practice.

No efforts are made by the husbandmen to improve the quality of the crop by selection of seed, or to increase the out-turn by artificial manuring, though some years ago the properties of basic slag as a fertilizer were tested. Nor is any improvement likely to occur so long as the Bassein milling firms refuse to give higher rates for better-class paddy. Experiments in the cultivation of tobacco have not found favour with the local agriculturists. Agricultural advances, generally for purchase of cattle or seed-grain, are eagerly taken up, especially in the Bassein subdivision, where cattle-disease is particularly rife. The yearly loss of cattle is enormous, and more stringent measures to eradicate disease are required. The total amount advanced in 1903-4 was Rs. 15,140.

Cattle, ponies, and sheep.

The cattle of Bassein are of the common breeds of the country, and, except in the Ngathainggyaung subdivision, are only of ordinary quality. In the north, however, where the grazing facilities are good, the live-stock, and especially the bullocks, are above the average. Scarcely any Indian cattle are kept, except in the Bassein and Ngathainggyaung towns. As is usually the case in the delta Districts, where land communications are not good, ponies are scarce and the local breed is of poor quality. Beasts imported from Prome and other breeding centres command high prices. Goats are few in number.

The grazing is ample, and no difficulties are encountered in feeding stock. The grazing-grounds are, however, largely devoid of shade, and this fact and the badness of the water-supply in the hot season are the principal causes of disease. The total area of grazing-ground actually reserved is 104,852 acres, and the total number of cattle in 1903-4 was 153,700, showing about three-fourths of an acre per head of stock.

Fisheries.

Numerous fresh-water fisheries exist, a full account of which will be found in a report by Major Maxwell, published in 1904. They lie for the most part in the north-east of the District. The most important fishery is the Inye Lake in the Kyonpyaw

township, the lease of which fetches about Rs. 28,000 annually. Of turtles, both the loggerhead and the green variety are plentiful along the southern coast. The most valuable bank is that at Diamond Island, from which Major Maxwell estimates an out-turn of one and three quarter millions of turtles' eggs annually, valued at more than a quarter of a lakh. The District fishery revenue amounted to 2·9 lakhs in 1903-4.

Forests. The forests present two types. The first is found along both slopes of the Yoma, and is evergreen, interspersed with patches of bamboo. On the western slope it has been greatly overworked in the past, and steps are being taken to reserve large portions. This tract contains *pyingado*, *pyinma*, and about thirty other kinds of timber, and provides large quantities of canes and bamboos used in the fisheries all over the delta and for building. The second type of forest is marshy and tidal, and contains various species of mangrove, *kanazo*, and other inferior woods, used mainly for fuel. Owing to unrestrained clearing of forest in the north-east, fuel will probably be scarce before long in that quarter. The area of protected and 'reserved' forests is 208 square miles, and that of unprotected but 'reserved' forests 76 square miles. The forest receipts in 1903-4 amounted to a lakh.

Minerals. The only minerals are pottery clay, laterite, limestone, and sandstone, and they are of little commercial importance. The requirements of the newly constructed railway has brought about a temporary development of the limestone and sandstone industry; but, this demand satisfied, the further working of these mineral resources is likely to stop. Laterite is worked in a spasmodic fashion to meet the requirements of the Public Works department or the Bassein municipality, and pottery clay is collected by the pot-makers of Sinobo and Kwinlya; but there is no systematic working of minerals.

Arts and manufactures. A little gold and silver work is done in Bassein, but it is ordinarily of poor quality. The best-known hand industries are pot-making and the manufacture of umbrellas. Glazed pottery is made principally at Sinobo near Bassein, and at Kwinlya below Ngathainggyaung. The Bassein umbrella is made of paper or pith, and is generally decorated with elaborate hand-painted floral designs. The country salt, known as *kyinsa*, is used largely in the making of *ngapi*, pressed fish or salt-fish paste, which is extensively manufactured in the District. From 30 to 40 parts of salt are mixed with 100 parts of fish to make this. A full description of the methods of manufacture is given in the fishery report referred to above,

which enumerates eighteen different kinds of *ngapi*, all made in different ways and all bearing different names. It is customary in some cases for the bark of the *ondon*-tree (*Tetranthera laurifolia*) to be pounded up and mixed with the *ngapi*, its object being to prevent decrease of weight through shrinkage.

The principal factories of Bassein are the rice-mills, of which there are eight, five owned by British firms and three by German. Another, managed by a foreign firm, is in process of construction, and a few minor concerns are the property of residents of Bassein. The rice turned out is of the kind known as 'cargo rice,' i.e. one-fifth of the husk is left on the milled product.

Saw-mills are the only other factories of importance, the most important being one owned by the Sgaw-Karen Baptist Mission. The number of logs sawn in it was 4,500 in 1901, but the completion of the railway and the consequent demand for sleepers has considerably increased the output since then. *Pyingado* is the principal timber dealt with in the mills. Salt is obtained in the Ngaputaw township by concentration under solar heat, and then by boiling.

Commerce and trade. The maritime export trade of Bassein is practically confined to rice, which is grown in the District and milled in the town into 'cargo rice' prior to export to Europe. In 1903-4 the exports of rice were 152,000 tons, valued at 104 lakhs. The total imports by sea in the same year were valued at only Rs. 1,35,000. Owing to the absence in most of the mills of plant for the production of 'white rice,' the exports to ports in India are insignificant. Ordinarily the most important oversea imports are salt, coal, and coco-nuts. Salt comes mainly from Europe, coal from India, and coco-nuts from Madras or the Straits. A brisk trade in general merchandise is carried on by river steamers with Rangoon and other delta towns. The imports are piece-goods, hardware, and the like; and the exports are *ngapi* and other local products. The bulk of the petty trade is still in the hands of the Burmans, but natives of India and Chinamen also do a large and growing business.

Means of communication. The Bassein-Henzada-Letpadan railway, opened to traffic in 1903, passes through the District for 66 miles and taps the centre of it. The principal stations are Dagā, Athok, Yegyi, and Zayathla. The railway is already very popular with passengers, though it has so far attracted little goods traffic, and all the paddy still comes by river to be milled at Bassein.

In the south of the District, where communication is almost entirely by water, the roads are chiefly in the immediate neighbourhood of Bassein town. The total length of metalled roads outside the town is 42 miles, 15½ of which are kept up from Provincial and 26½ from District cess or other Local funds. The total length of unmetalled roads is 53 miles, 24 being maintained from Provincial and 29 from Local funds. The principal roads are: the Bassein-Shwemyindin road, the Bassein-Henzada road, and the Bassein-Shanywa road. In the Ngathainggyaung subdivision the main highways are from Ngathainggyaung to Ataung (via Kyonpyaw), from Yegyi to Inma (via Athok), and from Inma to Kyonpyaw. In the north the embankments constructed by Government about thirty years ago to prevent the flooding of low-lying areas afford a convenient means of communication during the rains. The Ngawun and Dagā rivers are navigable practically throughout the District. No seagoing lines of passenger steamers call at the port of Bassein; but the Irrawaddy Flotilla Company runs steamers from Bassein three times a week to Rangoon via Myaungmya, Wakema, and Ma-ubin, and to Kyonpyaw, daily to Myaungmya, and twice a week to Ngathainggyaung, and in the rains onwards to Henzada. The south is served by private launches. The District east of the Yoma contains scarcely a single village of any size which is not supplied with some form of steamer service. Native boats, large and small, ply on all the inland waters, and numerous ferries are maintained.

District subdivisions and staff.

The District is divided into two subdivisions, with head-quarters at Bassein and Ngathainggyaung. Each subdivision has three townships; the Bassein subdivision comprises the BASSEIN, THABAUNG, and NGAPUTAW townships, and the Ngathainggyaung subdivision comprises the NGATHAINGGYAUNG, KYONPYAW, and KYAUNGGON townships. Bassein is the head-quarters of the Bassein-Myaungmya Forest division, under a Deputy-Conservator of forests; and the Port Officer, Bassein, is Collector of Customs.

Civil justice and crime.

The District Judge exercises jurisdiction also over Henzada District, and the Bassein Small Cause Court judge is at the same time the judge of the Bassein township court. Two other judges relieve the township officers of the Ngathainggyaung, Kyainggon, and Kyonpyaw townships of all civil work and have Small Cause Court jurisdiction locally, but in the remaining two townships the township officers are judges in their respective courts.

Criminal justice is administered in the usual way by the

executive officers, District, subdivisional, and township. In addition a special magistrate has recently been appointed to exercise criminal jurisdiction within the limits of the Ngathainggyaung and Bassein subdivisions. Sessions cases are tried by the Divisional Judge, Bassein Division.

Criminal work is heavy. Cattle-thefts are frequent, as also are robberies. Deterrent sentences have somewhat reduced the criminal use of the knife, but it is still unfortunately common. They have also had the effect of causing bullies to substitute for knives clubs, which in practice are nearly as dangerous. Gambling, with its lamentable predisposition to crime, is very prevalent in all parts of the District, and drunkenness cannot be called rare, although strenuous endeavours have been made in the past to reduce the facilities for drinking.

During the first two years (1852–3) of the British occupation, the Burmese tax on cattle was continued by the new rulers, and an impost of Rs. 10 was levied on every pair of buffaloes or bullocks used for ploughing; but no land tax was then demanded of the people. In 1854 surveyors were brought down from Arakan, the different circles were measured and a scale of revenue rates was fixed, though it is not precisely known on what principles they were calculated. These rates were systematically and methodically revised in 1861, crop-cuttings being made, and local prices considered. A summary enhancement of 25 per cent. was made in 1879; but during this and the following years a detailed cadastral survey was undertaken, and regular settlement operations at once followed (1879–83) over the whole District, except the Ngaputaw township, the maximum rate sanctioned being Rs. 3–4–0, and the minimum 12 annas per acre. Portions of the Ngathainggyaung and Kyonpyaw townships were dealt with in 1883–4 and 1884–5, and the Ngaputaw township was regularly settled during the season 1901–2. The settlement of 1879–83 was revised between the years 1897–9, the result being an enhancement in the Bassein subdivision of 20 per cent. and in the Ngathainggyaung subdivision of 48 per cent. The maximum rate on rice land now in force is Rs. 4 and the minimum 12 annas, the average being Rs. 2–4–0. The maximum on mixed gardens is Rs. 3 per acre and the minimum Rs. 2–8–0, the average being Rs. 2–12–0. Betel-vines are taxed at Rs. 5 to Rs. 10 per acre, *dani* palms at Rs. 4 to Rs. 5, and miscellaneous cultivation at rates varying from Rs. 1–8–0 to Rs. 2–8–0.

Revenue administration.

The tax on salt is Rs. 2–3–6 per 100 viss (365 lb.) turned out. The system of raising the salt revenue by a tax on output was introduced in 1902 as an experiment, the arrangement previously in force having been to tax the cauldrons employed in boiling. After a brief strike the salt-makers acquiesced in this method of assessment. For the realization of the tax a staff of two inspectors and two assistant inspectors is employed

The land revenue was 12·8 lakhs in 1900–1 and 13·8 lakhs in 1903–4. Comparative figures cannot be given for earlier years, owing to the modifications that have taken place in the interval in the District boundaries, but it may be pointed out that the land revenue raised from an area larger than the present District was 7¾ lakhs in 1886. The total revenue from all sources was 35·9 lakhs in 1900–1 and 29·3 lakhs in 1903–4.

Local and municipal government.

The District cess fund, administered by the Deputy-Commissioner for the provision of roads, &c., is maintained by a 10 per cent. levy on the land revenue. Its income was Rs. 1,65,000 in 1903–4, and the chief item of expenditure was Rs. 52,000 on public works. BASSEIN and NGATHAINGGYAUNG with Daunggyi are the only municipalities.

Lighthouses.

South of Cape Negrais, in 15° 42′ N. and 94° 17′ E., is the Alguada reef, on which a lighthouse was built in 1865. The structure is of granite, stands 144 feet high, and till 1902 exhibited a first-class catadioptric light visible at 20 miles. In 1902 a new light of 97,000 candle-power, visible 18 miles, was substituted for the old one.

Police and jails.

The police are under a Superintendent, assisted by three Assistant Superintendents, in charge of the Ngathainggyaung and Bassein subdivisions and the town of Bassein respectively. The force consists of 3 inspectors, 2 chief head constables, 9 head constables, and 369 sergeants and constables, distributed in 20 police stations and outposts. The military police, who belong to the Toungoo battalion, number 199, and are posted as follows: 90 at Bassein, 34 at Ngathainggyaung, and the remainder at outlying township head-quarters.

The Central jail at Bassein has accommodation for 1,271 prisoners, and had an average daily population of 730 in 1903. The principal industry is mat-making, and the mats are taken as fast as they can be turned out for the shipping which visits Bassein. Furniture is also manufactured and is sold locally.

Education.

The percentage of literate persons in 1901 was 41 in the

case of males and 7·5 in the case of females, or 25 for both sexes together. The number of pupils at school has increased from 8,630 in 1880–1 to 11,019 in 1890–1, and to 11,531 in 1903–4. In the last year the District contained 19 secondary, 218 primary, 6 special, and 230 elementary (private) schools, with 8,908 male and 2,623 female pupils. The principal educational institution is the Bassein municipal high school, in which instruction is given up to the ninth standard. The expenditure on education in 1903–4 amounted to Rs. 68,600, of which municipalities contributed Rs. 16,700, the cess fund Rs. 14,500, and the Government Rs. 10,400, while Rs. 16,300 was collected in fees and Rs. 10,700 in subscriptions.

Hospitals and dispensaries.

There are two hospitals, with accommodation for 75 in-patients. In 1903 the number of cases treated was 24,853, including 1,389 in-patients, and 1,135 operations were performed. The income amounted to Rs. 20,300, the two municipalities contributing Rs. 14,500, private subscriptions Rs. 2,300, and Local funds Rs. 2,500. A dispensary is about to be built at Kyaunggon.

Vaccination.

Vaccination is compulsory only in the towns of Bassein and Ngathainggyaung, but progress in vaccination during recent years has been fair. In 1903–4 the number of persons successfully vaccinated was 16,320, representing 42 per 1,000 of population.

[J. Mackenna, *Settlement Reports* (1899–1900, and 1903); Major F. D. Maxwell, *Report on Inland and Sea Fisheries* (1904); B. Samuelson, *History of Embankments, Henzada Division* (1899).]

Bassein Subdivision.—Southern subdivision of Bassein District, Lower Burma, consisting of the townships of BASSEIN, THABAUNG, and NGAPUTAW.

Bassein Township.—Central township in the Bassein subdivision of Bassein District, Lower Burma, lying between 16° 35′ and 16° 59′ N. and 94° 30′ and 95° 3′ E., on both sides of the Bassein river, with an area of 563 square miles, which includes the area that till recently formed the township of Kangyidaung. The two townships together had a population of 94,301 in 1891 and 104,647 in 1901, half the increase being due to non-agriculturists. There are one town, BASSEIN (population, 31,864), the head-quarters, and 518 villages. In 1903–4 the area under cultivation was 244 square miles, paying a land revenue of Rs. 3,67,000.

Thabaung.—Northernmost township of the Bassein sub-

division of Bassein District, Lower Burma, lying between 16° 35′ and 17° 16′ N. and 94° 23′ and 95° 5′ E., and skirted by the Bay of Bengal on the west, with an area of 1,118 square miles. The western half is cut up by the spurs of the Arakan Yoma, but the rest is a dead level. It contains 440 villages. The population was 38,924 in 1891 and 47,802 in 1901, nearly a fourth being Karens. The head-quarters are at Thabaung (population, 686), about 30 miles north of Bassein town, on the right bank of the Bassein river. In 1903–4 the area under cultivation was 81 square miles, paying a land revenue of Rs. 1,13,000.

Ngaputaw.—Southern township of Bassein District, Lower Burma, lying at the extreme south-west corner of the Irrawaddy delta, between 15° 50′ and 16° 37′ N. and 94° 11′ and 94° 47′ E., with an area of 1,439 square miles. Its southern and western borders skirt the sea, and the uplands of the Arakan Yoma render its western areas useless for cultivation. The population was 29,810 in 1891 and 37,126 in 1901, distributed over 244 villages, the density being only 26 persons per square mile. The head-quarters are at Ngaputaw (population, 1,338), on the eastern bank of the Bassein river, about 16 miles due south of Bassein town. In 1903–4 the area under cultivation was 107 square miles (an increase of over 70 per cent. in ten years), paying a land revenue of Rs. 1,03,000. One of the main industries of the township is the manufacture of salt.

Ngathainggyaung Subdivision.—Northern subdivision of Bassein District, Lower Burma, consisting of the townships of NGATHAINGGYAUNG, KYONPYAW, and KYAUNGGON.

Ngathainggyaung Township (*Yegyi*).—North-western township of the Ngathainggyaung subdivision of Bassein District, Lower Burma, lying between 17° 6′ and 17° 29′ N. and 94° 47′ and 95° 13′ E., with an area of 345 square miles. The population was 56,563 in 1891 and 64,891 in 1901, living in 387 villages and one town, NGATHAINGGYAUNG (population, 7,182), the head-quarters. The township lies along the Bassein river and is fertile, compact, and thickly populated. In 1903–4 the area under cultivation was 136 square miles, paying a land revenue of Rs. 2,29,000, while the total revenue amounted to Rs. 4,38,000.

Kyonpyaw.—North-eastern township of the Ngathainggyaung subdivision of Bassein District, Lower Burma, a level stretch of country intersected by tidal creeks, lying between 17° 8′ and 17° 30′ N. and 95° 9′ and 95° 28′ E., with an area

of 292 square miles. It contains 466 villages, and the population was 50,002 in 1891 and 70,010 in 1901. It is the most thickly populated township in the District, and its rate of increase during the decade has been far more rapid than that of any other portion of the District. Kyonpyaw (population, 5,358), on the right bank of the Dagā river, near the western border of the township, is the head-quarters. In 1903–4 the area under cultivation was 171 square miles (an increase of 45 per cent. in ten years), paying a land revenue of Rs. 2,29,000. The Inye Lake in this township is an important fishery, the lease of which fetches about Rs. 28,000 annually.

Kyaunggon.—Southern township of the Ngathainggyaung subdivision of Bassein District, Lower Burma, lying between 16° 54′ and 17° 13′ N. and 94° 58′ and 95° 20′ E., with an area of 370 square miles. The township is low-lying and fertile, and cut up by tidal creeks. It contains 562 villages, and the population was 51,931 in 1891 and 66,951 in 1901. The head-quarters are at Kyaunggon (population, 1,717), on the Dagā river, 40 miles north-east of Bassein town. In 1903–4 the area under cultivation was 120 square miles, paying a land revenue of Rs. 3,38,000.

Bassein Town (*Pathein*). — Head-quarters of the Irrawaddy Division and of Bassein District, Lower Burma, situated in 16° 46′ N. and 94° 46′ E., on both banks of the Bassein river, 75 miles from the sea and 192 by rail from Rangoon. The population, including that of Bassein port, has increased steadily from 20,688 in 1872 to 28,147 in 1881, 30,177 in 1891, and 31,864 in 1901. It comprises Burmans, Karens, natives of India, and Chinamen, the first forming about two-thirds of the whole. The main portion of the town, consisting of the Athegyi, Talainggyaung, and Myothit quarters, which comprise the civil station and the bazar, lies on the left or eastern bank of the river, while the Thinbawgyin quarter on the western bank contains the principal mills. No trustworthy records of the early history of the town exist. One tradition puts its foundation in the thirteenth century, but old Talaing histories mention the thirty-two cities of Bassein (Pathein) much earlier. It is believed by some that the name is Talaing in origin; but the theory that Pathein has some connexion with *Pathi*, the Burmese name for a Musalmān, is not unreasonable, and it is indisputable that the town has long been inhabited by natives of India. Bassein has for centuries been a trading centre of some importance; and even if it is not identical with the ancient port of Cosmin, referred to by Cesare de' Federici

and Gaspar Balbi, it is possible that Cosmin was within the limits of the existing District. The seizure of the town by the Burmese troops in 1755 was one of the first incidents in the great Alaungpayā's earliest campaign against the Peguans in the south. The British were at that time established as traders in Bassein, and in 1757 the East India Company obtained a piece of land in the town by treaty with the victorious monarch of Ava, and secured free trading rights within the port. Two years later all the Europeans were massacred. The town was captured in 1824 during the first Burmese War and held till the Treaty of Yandabo, to be finally occupied in the second Burmese War in 1852.

The town has an area of nearly 12 square miles, the greater part of which is wooded. The principal streets run parallel to the river, with short connecting roads. The most important is the Strand road, following the stream, from which the other main thoroughfares branch off. The total length of roads within municipal limits is 37½ miles. The Government offices and treasury are on the site of the old Zechaung fort, built after the province of Pegu was annexed. Around the fort lies the civil station. To the east is the Myothit quarter, through which run two main streets to a pagoda-covered plain, where all the local festivals are held. Close by the fort lie the other principal public buildings, post and telegraph offices, the Queen Victoria Memorial Library, the Roman Catholic and Anglican churches, and the extensive premises of the American Baptist Mission. There are public gardens and a Jubilee Memorial Park. The town contains a number of pagodas, among the most sacred being the Shwemoktaw within the limits of the Zechaung fort, the Tagaung, the Payāgyigon, the Mahābawdi, the Shwezigon, and the Wetlu.

Bassein is well served by the Irrawaddy Flotilla Company, the steamers of which run eastwards to Rangoon and Myaungmya, and northwards to Kyonpyaw and Ngathainggyaung, and, during the rains, to Henzada. The new railway gives connexion twice a day with Henzada (82 miles), and once a day with Letpadan and Rangoon (192 miles). The principal industry is rice-milling; eight important mills and some smaller concerns turn out what is known as 'cargo rice' (one-fifth husk). The manufacture of earthenware and timber-sawing are important local industries.

Bassein is almost exclusively an exporting market. In 1903-4, 152,000 tons of 'cargo rice,' valued at 104 lakhs, left the port, consigned entirely to Europe. Imports from foreign

countries are insignificant; those from Indian ports were valued in 1903-4 at Rs. 89,000, comprising gunnies, betel-nuts, and other Indian commodities. A steady river-borne trade is carried on with Rangoon, and commerce with the rest of Burma is likely to be stimulated by the new railway.

Bassein is the head-quarters of the Judge of the Bassein Division. The town was constituted a municipality in 1874. The municipal income during the ten years ending 1901 averaged 1·2 lakhs, and the expenditure 1·1 lakhs. The figures for 1903-4 were 1·5 lakhs and 1·6 lakhs respectively. The chief sources of revenue in the latter year were house tax (Rs. 28,000), lighting rate (Rs. 10,000), conservancy (Rs. 11,500), and bazars (Rs. 56,000); while the chief objects of expenditure were lighting (Rs. 12,000), conservancy (Rs. 25,000), hospitals (Rs. 20,000), schools (Rs. 7,500), and roads (Rs. 31,000).

The port is administered through a Port fund, which derives its income from shipping dues, &c., and bears the cost of lighting and buoying the channels. The Port fund income in 1903-4 was Rs. 37,000. There is a municipal high school, teaching up to the ninth standard, in addition to missionary schools, and a Convent school for girls. The civil hospital has sixty-three beds.

Ngathainggyaung Town.—Head-quarters of the subdivision of the same name in Bassein District, Lower Burma, situated in 17° 23′ N., 95° 5′ E., on the left bank of the Bassein river, about 50 miles north-north-east of Bassein town. Population (1901), 7,182. Ngathainggyaung has for some time been a town of importance. It was garrisoned by a native infantry detachment during the second Burmese War, and was seized by the rebels in the disturbances in 1854, but was quickly recaptured by Major Fytche. Combined with Daunggyi on the opposite bank of the river, it was constituted a municipality in 1878, covering an area of about 3 square miles. The municipal income and expenditure during the ten years ending 1901 averaged about Rs. 17,000. In 1903-4 they amounted to Rs. 24,000 and Rs. 19,000 respectively. Of the receipts, Rs. 15,000 was obtained from tolls on markets and slaughter-houses, and Rs. 3,000 from house tax. The chief items of expenditure were conservancy (Rs. 4,000) and roads (Rs. 3,000). The town possesses a civil hospital, with accommodation for twelve in-patients. There is no municipal school, but the committee spent Rs. 1,300 on education in 1903-4.

Boundaries, configuration, and river system.

Myaungmya District.—A delta District in the Irrawaddy Division of Lower Burma, lying between 15° 44′ and 16° 55′ N. and 94° 36′ and 95° 35′ E., with an area of 2,663 square miles. In shape a rough parallelogram, the District is bounded on the south by the sea; on the west by Bassein District; on the east by Pyapon; and on the north by Ma-ubin. It is practically a collection of flat, fertile islands, sundered the one from the other by rivers which wind through the levels in a southwesterly direction, and are connected by countless tidal creeks, mostly navigable. With the exception of a small tract of rising ground 30 miles south-west of Myaungmya town, an offshoot of the Arakan Yoma, the surface of the country is very little above the rise of spring tides. Towards the south, near the coast, the principal features of the scenery are interminable stretches of mangrove jungle and *dani* palm, which border the mud-banks of the creeks. Farther north, plantain groves take the place of the tidal forests, and, with the pagodas, help to break the monotonous character of the landscape, which otherwise would show little more than a waste of wide rice flats, chequered with strips of grass and tree jungle. Its waterways are the main natural features of Myaungmya. These are all branches of the Irrawaddy, though that name is given only to the channel which runs down the eastern edge of the District, forming the greater portion of the border between it and the District of Pyapon. The Panmawadi, composed of various streams which leave the Irrawaddy in Henzada District, skirts Myaungmya for a considerable distance on its western side before striking off westwards into Bassein, one of its branches, the Thetkethaung, bounding it down to the sea-coast. Right down the centre of the District flows the Pyamalaw river, parallel to the Irrawaddy and Panmawadi, and enters the sea in two branches, named the Pyamalaw and Pyinzalu, midway between them. The Shwelaung river takes off from the Irrawaddy at the north-east corner of the District, and, after forming the northern boundary, turns south at the town of Shwelaung, and flows midway between the Irrawaddy and the Pyamalaw for about 25 miles. Here, combining with a branch of the Irrawaddy, it becomes the Kyunpyatthat river, which, leaning first towards the Pyamalaw river, eventually joins the Irrawaddy about 24 miles from the sea. The Irrawaddy, after forming the eastern boundary of the District for 24 miles, divides into two streams, never more than 5 miles apart, which unite again about 30 miles farther south. The eastern branch retains the name of the Irrawaddy, while the

western is known as the Yazudaing. The lesser rivers are the Wakema, 23 miles in length, connecting the Shwelaung and Pyamalaw, and flowing past the rising town of Wakema; and the Einme and Myaungmya, which form a loop from the Panmawadi river nearly 60 miles in length.

The soil is composed of alluvial formation, resting on a substratum of black clay. South-west of Myaungmya is a hilly tract, composed of rocks of the Nummulitic group; but beyond this small stretch of upland the country to some depth below the surface is largely a succession of layers of river silt, brought down from the north within what is geologically a comparatively recent date. Geology.

The flora is of the type common to all the delta tracts, which is briefly described under HANTHAWADDY DISTRICT. Tidal and swamp vegetation predominates. Flora.

Elephants and tigers are found in the southern and more unreclaimed parts, but the spread of cultivation is reducing their range. Leopards (including the black variety) are found in all parts, and are occasionally trapped, and *sāmbar* and barking-deer are fairly plentiful in the Myaungmya township. Monkeys abound in the southern forests, while in the smaller creeks are numerous crocodiles, driven to these more secluded retreats by the traffic in the larger streams. Along the sea-coast both the turtle and the tortoise are common. Fauna.

On the whole, the climate, though enervating, is not unhealthy. Proximity to the sea renders it more equable than that of the Districts farther inland. The average minimum temperature is about 65°, and the maximum 95°, the average mean being about 80°. The temperature never rises above 105°. The rainfall is copious and regular, varying locally with the proximity to the coast. The northern townships receive from 70 to 90 inches a year, the southern townships from 90 to 130 inches. Owing to the nature of the surface of the country, certain tracts are regularly inundated during the rains. Climate, temperature, and rainfall.

The cyclone of May, 1902, unroofed a third of the dwellings in the District, sank many boats with considerable loss of life, and destroyed much stored grain; but visitations of this nature are rare.

The name Myaungmya is said to mean 'pleasant canal,' but this is only the most plausible of various alleged derivations. The District has made no permanent mark in history, and, save in the fourteenth century, the old annals contain no reference to it of importance. In 1387 one Lauk Bya, governor of Myaungmya, is said by the Talaing chroniclers to History.

have raised the standard of revolt against Razadirit, king of Pegu, and to have called in the aid of the king of Ava. The Burmese troops were, however, defeated at Hmawbi, the rebellion was quashed, and Lauk Bya was eventually captured and beheaded. Myaungmya is referred to in the history of the events that followed on this revolt, and in 1410 a Burmese army is said to have made an unsuccessful attack upon the town. But no mention of it is made in later chronicles, and in neither the first nor the second Burmese War did it play an important part. The District is of modern creation, having been formed in 1893 by the combination of the western townships of Thongwa (now Ma-ubin) District with the eastern townships of Bassein District. On the constitution of Pyapon District in 1903, the Pantanaw township of the Wakema (or eastern) subdivision was restored to Ma-ubin District, and a large circle of the Pyindaye township of the old Thongwa District was added to Myaungmya, the Wakema township being made into a subdivision and divided into two townships, with head-quarters at Wakema and Moulmeingyun.

The people.

Owing to the frequent changes in the boundaries of the District, it is not possible to give accurate statistics of the population in earlier years. In 1881 there were about 85,000 persons in the area now constituting Myaungmya, a total which had risen by 1891 to 185,930. After that date the increase in population was very rapid, owing to immigration, and in 1901 the total stood at 278,119.

The distribution of the population in 1901 over the existing area is given in the following table:—

Township.	Area in square miles.	Number of Towns.	Number of Villages.	Population.	Population per square mile.	Percentage of variation in population between 1891 and 1901.	Number of persons able to read and write.
Myaungmya	1,069	1	227	75,343	70	+ 49	19,211
Einme	315	...	122	59,367	188	+ 45	13,544
Wakema	718	1	194	75,478	105	+ 58*	39,200
Moulmeingyun	561	...	129	67,931	120		
District total	2,663	2	672	278,119	104	+ 49	71,955

* The Moulmeingyun township was only constituted in 1903.

Myaungmya and Wakema are the only towns. The rate of increase is extraordinary in the Wakema township, and throughout the whole District is large. The immigrants come chiefly

from the neighbouring District of Bassein, from the dry zone districts on the Irrawaddy, and to a small extent from Mandalay, Shwebo, and Lower Chindwin in Upper Burma. Burmese is spoken by about 190,000 persons, and Karen by about 77,000.

Of the total population, Burmans number about 180,000, and Karens about 78,000. The latter are most thickly distributed in the older cultivation in the north, and still preserve their language. The immigrants from Upper Burma go farther south to make new clearings. About 2,000 persons returned themselves as Talaings in 1901, but only a third of them spoke Talaing. The Indian population is small, numbering 3,400 Musalmāns and 2,000 Hindus. The Christian community, on the other hand, is large, numbering about 12,800, being the largest aggregate in the Province after Rangoon, Bassein, and Toungoo. Two-thirds of the population are directly dependent upon agriculture for a living, and about 3,700 live by *taungya* (shifting) cultivation in the small hilly area of the District. **Race and occupation.**

There are 12,500 native Christians, mostly Karens. More than 9,000 of these belong to the American Baptist Mission, which has stations in the large Karen villages and many village churches. The head-quarters of the Roman Catholic missions are at Myaungmya, Kanazogon, and Kyontalok, where there are substantial churches. **Christian missions.**

In all parts except the Myaungmya township the natural conditions, richness of soil, flatness of surface, and timeliness and sufficiency of rainfall are extremely favourable to agriculture. The soil is an alluvial loam on a substratum of clay, formed by the deposit of silt from the Irrawaddy floods, which inundate a considerable proportion of the District. The only variation in the contour of the land is the gradual slope away from the banks to the interior of the island of cultivation. In consequence of these favourable conditions, practically nothing but rice (*kaukkyi* or wet-season) is grown, though a certain number of plantain groves exist. The system of cultivation is the same as in other parts of Burma, the rice being transplanted from nurseries after the ground has been prepared with the harrow (*tundon*). The plough is often not used at all, the seed being scattered broadcast after the grass has been cut. The gardens usually lie in long narrow strips along the banks of the streams. Manuring is said to be unknown and unattempted, and even the burning of the surface straw is rare. **General agricultural conditions.**

Agricultural statistics and principal crops.

The main agricultural statistics for 1903-4 are shown below, areas being in square miles :—

Township.	Total area.	Cultivated.	Forests.
Myaungmya . .	1,069	205	1,480
Einme . . .	315	170	
Wakema . .	718	151	
Moulmeingyun .	561	273	
Total	2,663	799	1,480

Accurate statistics of the area under cultivation in earlier years cannot be given, owing to the numerous changes in the District boundaries; but in general terms it may be said that about 312 square miles were cultivated in 1881, 437 in 1891, and 711 in 1901. Rice occupied 764 square miles in 1903-4. The area under garden cultivation was 20 square miles, evenly distributed over the various townships, with the exception of Moulmeingyun, where the gardens are confined to the Kyaikpi circle on the eastern bank of the Irrawaddy. Of the total area under orchards 5,000 acres were devoted to plantain groves. The *dani* palm, used largely for thatching purposes, is most popular in the Myaungmya township, and is grown on 4,100 acres. Almost the only other crop worthy of mention is sugar-cane, which covers about 550 acres in the Myaungmya and Wakema townships. Sesamum is, however, also cropped to a small extent, and coco-nuts are fairly plentiful. There are no particular forms of tenure.

Improvements in agricultural practice.

Large quantities of cultivable land are taken up each year by the agriculturists of the District and the many immigrants. In 1903 about 39 square miles were ploughed for the first time. The extension cannot be continued for long, as the reservation of forests, grazing-grounds, and fishery tracts has had the effect of reducing the available waste land considerably during the past few years. There is nothing to record in the way of improvements in agricultural practice. The provisions of the Land Improvement and Agriculturists' Loans Acts have been made but little use of in recent years, as the large extensions of cultivation have been carried out by capitalists to whom the small sums obtainable under these Acts are no inducement.

Cattle, &c.

Both buffaloes and kine are bred and employed in the fields. Buffaloes are used by Karens and Burmans mostly in the more low-lying tracts, where they thrive better than cattle, and have harder work to do. Ponies are few and can be used only in the north. In the network of creeks which intersects the

southern area their employment is out of the question. Except in the Wakema township grazing reserves are ample. In Wakema cultivation has expanded so rapidly during the last decade that the existing reserves are inadequate, but steps are being taken to remedy this defect. During the rains the cattle have to be protected from countless swarms of mosquitoes by the smoke of fires, or even by means of cloth coverings that answer the purpose of a mosquito curtain.

Irrigation and fisheries

There are no regular irrigation works, and no part of the larger embankment schemes of the delta fall within the limits of the District; but the Shwelaung marginal road (12 miles long) in the extreme north of the Wakema township shelters about 6,000 acres of land. Next to the cultivation of rice, fishing is the chief occupation of the inhabitants. It was even more important in the days when the Pantanaw township formed a portion of the District. The inland fisheries occupy a large portion of the eastern part of the Einme township, and the revenue derived from them amounted in 1903–4 to 1·3 lakhs. A full and interesting description of these fisheries and the methods of working them is contained in a report by Major Maxwell published in 1904. Turtle-banks exist along the coast of the District, of which the two most important are known as the Amatgale and Pyinsalu banks.

Forests.

The forests are of no great value. Teak is of comparatively rare occurrence, and the mixed forests in which it is found are unclassed. There is a small area of tropical forest in the hilly tract about 40 miles south-west of Myaungmya. Littoral forests are common in the southern portions, a considerable proportion of the low-lying area round the coast being covered with mangrove jungle, for the most part 'reserved.' The swamp forests lying to the north of these tidal forests form the main rattan-producing tracts of the District. The area of 'reserved' forests is 480 square miles, and the unclassed area is 1,000 square miles. The forest receipts amounted in 1903–4 to Rs. 28,000.

Minerals.

The mineral resources are comparatively meagre. Pottery clay is found in parts of the Einme township, where the poorer classes have taken to pot-making, and laterite is worked for road-metalling in the Myaungmya township, where also limestone is obtained in the hilly areas. The quarries are worked only in the dry season, and the blocks of limestone when extracted are transported by cart or boat some distance to the kilns.

Arts and manufactures.

With the exception of pottery, which is really only a domestic occupation, there are practically no arts save those that are entirely subsidiary to agriculture. Of industries the manufac-

ture of salt and *ngapi* may be mentioned. The head-quarters of the salt industry are at the two villages of Sagyin and Ganeik in the south-west of the Myaungmya township, a dozen miles from the sea on the Panmawadi river. Salt is obtained by evaporation, but the product is coarse and is used almost entirely in the local *ngapi* industry. The annual output is about 50,000 maunds, obtained from 14 factories containing 48 cauldrons of a capacity of 40 gallons each. *Ngapi* is fish-paste into which all the large surplus of fish caught in the District is transformed before being sent into the interior of Burma. Many varieties are produced, but the *ngapi* chiefly made here is the *damin* or sea *ngapi*, the head-quarters of the industry being at Labutta, on the right bank of the Ywe river, 20 miles from the coast.

Commerce and trade.

The principal exports are paddy and *ngapi*. The former is carried by boat or steamer either to Rangoon or to Bassein, according as the one or the other port is the more accessible. *Ngapi*, on the other hand, is sent to all parts of Burma. The imports comprise every article required by a primitive agricultural or fishing community, such as piece-goods, hardware, kerosene oil, &c.; these commodities are brought by river from Rangoon for the most part. The Irrawaddy Flotilla Company enjoys the larger share of this trade, but native boats also play a conspicuous part in the carrying business.

Communications.

No railways have been constructed, but the connexion of Myaungmya, Thīgwin, Einme, and Pantanaw (in Ma-ubin District) by means of a light railway is under consideration. The only roads are purely local. Water-communications are so plentiful, however, that these deficiencies have so far not been felt; in fact, no village of any size is situated far from a navigable waterway. The main steamer route from Rangoon to Bassein traverses the District by the cross-streams connecting the Irrawaddy, Pyamalaw, Ywe, and Panmawadi rivers. The steamers stop at Myaungmya, Wakema, and Shwelaung within the limits of the District. In addition, the main trade centres, Shwelaung, Wakema, Kyunpyatthat, Moulmeingyun, Einme, Thīgwin, Myaungmya, and Labutta, are kept in regular communication with each other, and with the towns of the neighbouring Districts of Bassein and Ma-ubin, by services of smaller steamers and launches.

District subdivisions and staff.

The District is divided for administrative purposes into two subdivisions: Myaungmya, comprising the Myaungmya and Einme townships, and Wakema, comprising the Wakema and Moulmeingyun townships. These administrative areas are in

charge of the usual executive officers, under whom are 7 *taik* (or circle) *thugyis*, and 673 *ywathugyis* or village headmen. The former are being gradually abolished, their revenue duties being taken over by the village headmen in accordance with the policy pursued by the Government of late years. The Executive Engineer at Myaungmya is in charge of a division comprising Myaungmya, Ma-ubin, and Pyapon Districts. The District, together with Bassein, forms a Forest division, with head-quarters at Bassein.

Civil justice and crime.

For some considerable time the executive officers of the District have been almost completely relieved of civil judicial work, and the new judicial scheme is now in force, Myaungmya being the head-quarters of the Divisional and Sessions Judge of the Delta Division. A District Judge has been appointed, and the Deputy-Commissioner has no duties in connexion with civil justice. A subdivisional judge has been appointed for the two subdivisions of the District, and there is a special civil judge for the Myaungmya and Einme townships, while a judge, sitting at Wakema and Moulmeingyun, does the civil work for the two townships of the Wakema subdivision. Crime is of the type common to all the delta Districts of the Province. It has increased of recent years, but not out of proportion to the growth in population.

Revenue administration.

Under the Burmese régime the revenue system was the same as that obtaining in the other Districts of Lower Burma. A tax was assessed at so much per yoke of oxen or buffaloes, and another impost corresponded more or less to the income tax of modern days. In 1862 acre rates were fixed in the northern portion of the Myaungmya township, and remained in force till 1880–1. They varied from R. 1 to Rs. 2 per acre, the former rate being levied on the exhausted land in the Myaungmya circle. The settlement of the Wakema township was carried out about the same time, and was revised ten years later. The revenue steadily increased, and in 1879–80 the rates were raised by about 25 per cent. in the Myaungmya township, and by 6 to 25 per cent. in the townships of Wakema and Pantanaw (the latter now in Ma-ubin District). This increase did not check the extension of cultivation, which shows that the existing rates did not press heavily on the people. The northern portions of the Myaungmya and Wakema townships were again brought under settlement in 1888–9, when they were divided into nine assessment tracts (with two soil classes); and the rates then in existence were replaced by rates on rice land varying from R. 1 to Rs. 2–10–0

per acre, on gardens at Rs. 2-8-0, and on miscellaneous crops at Rs. 2 per acre. The Einme township (till 1893 part of Bassein District) was assessed in 1854 at rates varying from Rs. 1-8-0 to Rs. 1-12-0 per acre. These were modified in 1862, the maximum rate being raised to Rs. 2-8-0 in a resettlement in 1881-2. The rates fixed in 1881-2 remained in force till 1897-8 in this area. The cultivated lands in the south of the Myaungmya township were settled in 1862, and were not resettled till 1901-2. At the time of resettlement rates in force varied from R. 1 (on the lands nearest the sea) to Rs. 2-10-0 per acre. On resettlement they were modified as follows. On rice lands the rate ranged from R. 1 (in the extreme south-west corner) to Rs. 3-4-0 an acre; on miscellaneous cultivation the rate was Rs. 1-8-0 throughout the tract; on gardens, Rs. 2; on *dani* palms, Rs. 4; on solitary fruit trees, 4 annas each. The northern part of the Myaungmya township and the Einme township were again settled in 1897-8. The lands were reclassified, the village charge being substituted for the *kwin* as the settlement unit, and rates varying from Rs. 1-4-0 upwards were sanctioned. The maximum rate for garden land in this portion of the District is Rs. 5 per acre on betel-vine and *dani* plantations, and Rs. 2-8-0 on other garden and miscellaneous cultivation. The settlement of the southern part of the Wakema subdivision was completed in 1902-3, the highest rate sanctioned being Rs. 5 per acre for rice, Rs. 10 for betel-vine, and Rs. 5 for *dani*. The northern part was taken in hand in 1903-4. An ordinary rice holding in the Myaungmya township ranges from 10 to 15 acres in extent, and in the rest of the District from 20 to 25 acres. Owing to the recent formation of the District and the frequent modifications of its boundaries, comparative revenue statistics cannot be given. The land revenue in 1903-4 amounted to 11·7 lakhs, and the capitation tax to 2·5 lakhs; the total revenue was 20 lakhs.

Local and municipal government.

The District cess fund, derived mainly from a 10 per cent. cess on the land revenue, and utilized for various local needs, had an income of 1·6 lakhs in 1903-4; and the chief items of expenditure were public works (Rs. 48,000) and education (Rs. 18,000). The only municipality in the District is MYAUNGMYA, but WAKEMA is managed by a town committee.

Police and jails.

The civil police force is under the orders of the District Superintendent, aided by one Assistant Superintendent and 4 inspectors. The lower grades are made up of 8 head con-

stables, 36 sergeants, and 206 constables, distributed in 12 police stations and 3 outposts. The military police force consists of 3 native officers, 8 *havildārs*, and 162 men, stationed at Myaungmya, at the various township head-quarters, and at Thīgwin, Shwelaung, Kyumpyatthat, and Kyaikpi.

The jail at Myaungmya has an enclosure capable of providing for 1,000 prisoners, but the actual accommodation in buildings is for 500, which is ample at present. The only occupations carried on by the prisoners are the manufacture of jail clothing for supply to other jails, and gardening.

Education. The standard of education is fairly high. The percentage of males recorded as literate in 1901 was 42·8, and that of females 7·2, or 25·9 for both sexes together. In 1904 the District contained 7 secondary, 155 primary, and 256 private (elementary) schools, with 6,734 male and 1,366 female pupils. The total includes a considerable number of Karen seminaries. Myaungmya town possesses an Anglo-vernacular middle school, with an attendance of about 100, which is maintained by the municipality. The public expenditure on education in 1903–4 amounted to Rs. 26,600, of which the District cess fund provided Rs. 18,000, Provincial funds Rs. 4,300, municipal funds Rs. 1,500, and fees Rs. 2,800.

Hospitals. The District contains two hospitals, with forty-nine beds. In 1903 the number of cases treated was 17,750, including 685 in-patients, and 419 operations were performed. The total expenditure was Rs. 8,000, of which municipal funds contributed Rs. 4,900 and Local funds Rs. 2,800.

Vaccination. In 1903–4 the number of persons successfully vaccinated was 12,642, representing 42 per 1,000 of population. Vaccination is compulsory only in Myaungmya and Wakema towns.

[W. E. Lowry, *Settlement Report* (1899); J. Mackenna, *Settlement Report* (1903); Major F. D. Maxwell, *Report on Inland and Sea Fisheries* (1904).]

Myaungmya Subdivision. — Western subdivision of Myaungmya District, Lower Burma, comprising the MYAUNGMYA and EINME townships.

Myaungmya Township. — Township of Myaungmya District, Lower Burma, lying between 15° 47′ and 16° 43′ N. and 94° 36′ and 95° 13′ E., with an area of 1,069 square miles. It is comprised between the Pyamalaw and Panmawadi rivers on the east and west, and extends from the Myaungmya river to the sea. It is for the most part flat, and would be a typical delta area were it not for a small

tract of comparatively hilly country which rises to the south-west of the township head-quarters, forming the only high land in the District. The greater part of the population occupies the north-east, and large stretches of jungle cover the southern portions. The population was 53,224 in 1891 and 75,343 in 1901, distributed in 227 villages and one town, MYAUNGMYA (population, 4,711), the head-quarters. About one-third of the total are Karens. In 1903-4 the area under cultivation was 205 square miles, paying Rs. 3,15,000 land revenue, and the total revenue amounted to Rs. 5,68,000.

Einme (Thīgwin).—North-west township of Myaungmya District, Lower Burma, lying between 16° 34′ and 16° 55′ N. and 94° 52′ and 95° 18′ E., with an area of 315 square miles. The population was 41,979 in 1891 and 59,367 in 1901, distributed in 122 villages. The head-quarters are at Einme (population, 2,050), on a waterway connecting the Dagā and Myaungmya rivers. The township is level, well watered, and fertile throughout. More than one-third of the population is Karen, and the proportion of Christians is large. In 1903-4 the area under cultivation was 170 square miles, paying Rs. 2,51,000 land revenue.

Wakema Subdivision.—Eastern subdivision of Myaungmya District, Lower Burma, comprising the WAKEMA and MOULMEINGYUN townships.

Wakema Township.—North-east township of Myaungmya District, Lower Burma, lying between 15° 44′ and 16° 48′ N. and 94° 53′ and 95° 35′ E., with an area of 718 square miles. It is absolutely flat and cut up by tidal creeks, large and small. The population of the existing township, which was reconstituted in 1903, was 75,478 in 1901, distributed over 194 villages and one town, WAKEMA (population, 4,300), the head-quarters. In 1903-4 the area under cultivation was 151 square miles, paying Rs. 3,20,000 land revenue.

Moulmeingyun.—Township of Myaungmya District, Lower Burma, lying between 15° 45′ and 16° 34′ N. and 95° and 95° 35′ E., with an area of 561 square miles. It is really a large island, bounded on the east by the Irrawaddy and on the west by the Kyunpyatthat and Pyamalaw rivers, and cut up by numerous creeks. The northern portion is somewhat densely populated, but the southern is mostly jungle-covered, though cultivation is rapidly extending. The township was constituted in 1903, out of a portion of the old Wakema township and an area transferred from the former Thongwa District at the time that the District of Pyapon was created. The popu-

lation of the township as now constituted was 97,931 in 1901, distributed in 129 villages, Moulmeingyun (population, 1,782), on one of the numerous branches of the Irrawaddy, being the head-quarters. In 1903–4 the area under cultivation was 273 square miles, paying Rs. 2,85,000 land revenue.

Myaungmya Town.—Head-quarters of the District and township of the same name in the Irrawaddy Division of Lower Burma, situated in 16° 35′ N. and 95° E., on the Myaungmya river, close to the western border of the District. Myaungmya is a District of recent creation, and its head-quarters is one of the smallest in the Province. The population in 1901 was 4,711. Portions of the urban area are low-lying, but the civil station is not unpleasantly situated on fairly high ground behind the native houses which cluster round the river bank. There is little of note in the history of the town beyond what is embodied in the District article. It was the scene of the first rising among the Karens in 1853, and became the District head-quarters forty years later. It contains no pagodas or other remains of more than local importance. The municipality of Myaungyma was established in 1886. The municipal income during the ten years ending 1901 averaged Rs. 18,000. In 1903–4 the income was Rs. 26,000, principally derived from tolls on markets (Rs. 17,500) and house tax (Rs. 2,000). The expenditure amounted to Rs. 36,000, the chief items of outlay being conservancy (Rs. 5,000) and hospitals (Rs. 5,800). The only large municipal scheme worthy of mention is the construction of a market recently undertaken at a cost of Rs. 44,000. There are no industries of importance in the town. The municipal school is the most important in the District, and has an attendance of about 100 scholars. The municipal hospital has thirty beds.

Wakema Town.—Head-quarters of the subdivision and township of the same name, in Myaungmya District, Lower Burma, situated in 16° 35′ N. and 95° 14′ E., on the banks of the Wakema river, one of the connecting channels which traverse the Irrawaddy delta, uniting the main streams. Wakema is a flourishing trade centre, and a principal port of call for the steamers of the Irrawaddy Flotilla Company. Its population in 1901 was 4,300, or nearly as large as that of the District head-quarters. Local affairs are managed by a town committee, constituted in 1902. The income of the town fund in 1903–4 amounted to Rs. 36,000, and the expenditure to Rs. 20,000. There is a town hospital with nineteen beds.

Boundaries, configuration, and river system.

Ma-ubin District (*Ma-u* tree, *Nauclea Cadamba*).—District of the Irrawaddy Division, Lower Burma, lying between 16° 30′ and 17° 25′ N. and 95° 15′ and 95° 55′ E. It is bounded on the north by Henzada District; on the east by Hanthawaddy; on the west by Myaungmya and Bassein; and on the south by Pyapon. The District is at the head of the lower delta of the Irrawaddy, which enters it on the north, and shortly afterwards, at the upper end of what is known as Ma-ubin Island, sends an important offshoot called the To or China Bakīr river to the east. The main stream, under the name of the Yazudaing, passes on to the south-west, and divides into a number of other tidal channels in Myaungmya and Pyapon Districts. The surface of the country is generally low, the greater part being subject to annual inundation, except where protected by embankments. During the rains the Irrawaddy rises about 25 feet higher than in the dry season, and, when unhindered by dykes, spreads over the country and forms vast lakes, out of which the higher lands emerge like islands. As is the case with all silt-depositing rivers, the surface of the country close to the banks is higher than it is inland, so that between the main streams there is not a watershed but a depression. These low-lying plains are covered with long grass interspersed with trees, and, though very fertile, are generally too deeply flooded to be cultivable. Lying within the main banks of the river are numerous large sandbanks and islands, flooded during the rains, but furnishing excellent ground for vegetable gardens in the dry season and extensive grazing-grounds for the cattle. The permanent cultivation, except where there are embankments, is practically confined to the land immediately adjoining the main banks of the river.

Geology, botany, and fauna.

The District is an alluvial flat, unbroken by any rising ground, and it cannot be said to possess any geological features worthy of record. The vegetation, which is largely swamp, resembles that in HANTHAWADDY DISTRICT, in the tracts farther from the sea. The fauna is similar to that of MYAUNGMYA and PYAPON. The elephant and tiger are scarce, but crocodiles abound and leopards are not uncommon.

Climate and temperature.

The climate is generally healthy, but at the same time most enervating. The approximate mean temperature is about 82°. Low-lying and moist, the District swarms with mosquitoes. The European houses at the head-quarters are provided with rooms of which the doors and windows are made of perforated zinc to keep out these pests, and in places the villagers have to protect not only their own bodies but those of their cattle at

night by means of gauze curtains. Though the District is wet and flat, disastrous floods are extremely rare, owing to the embankments; and when they occur, they are restricted to small areas.

Rainfall.

The rainfall is heaviest in the south, averaging 92 inches at Ma-ubin, 83 inches at Pantanaw, 80 inches at Yandoon, and 72 inches at the northernmost station, Danubyu, or an annual average of 82 inches for the District altogether. In the north it is more variable than in the south, but on the whole it is fairly regular and seldom insufficient.

History and archaeology.

Danubyu, in the north of the District, on the western bank of the Irrawaddy, is the only place of historical importance. It is famous for the stand made against the British by the Burmese general, the Mahā Bandula, in 1825. The side of the fort facing the river was nearly a mile long, and behind it was a garrison of 20,000 men. This position was unsuccessfully attacked by two columns under General Cotton, the greater part of the troops engaged being killed or wounded. Reinforcements were applied for, and the Commander-in-Chief, Sir Archibald Campbell, brought up his batteries. On the first day of the bombardment the Mahā Bandula was killed by the bursting of a shell, and the Burmans thereupon evacuated the place. In the war of 1852 no attempt was made to hold Danubyu; but after the occupation of Prome a force was gathered by an ex-*thugyi* named Nga Myat Tun, who repeatedly drove back, with considerable loss, the small detachments sent against him. After some delay his stronghold was carried by a larger British force, and the country gradually settled down. Part of the fort walls are still to be seen at Danubyu, occupied by monasteries, and under the shadow of the Nandawgon pagoda is a small cemetery containing the remains of those who fell in the second war.

Originally part of Henzada and Rangoon, a new District, embracing the present Ma-ubin District, and called after the village of Thongwa near Ma-ubin, was formed in 1875. This area was divided, in consequence of the rapid spread of cultivation and large increase in the population, first in 1893 on the formation of Myaungmya District, and again in 1903 when the District of Pyapon came into existence. At the last change the name of Ma-ubin was substituted for that of Thongwa.

The people.

The population of the area now forming Ma-ubin District was 176,000 in 1881; 216,930 in 1891; and 283,122 in 1901. Its distribution in 1901 is shown in the table on the next page.

The chief towns are YANDOON and MA-UBIN, the District head-quarters. The decrease of population in the Yandoon township during the ten years ending 1901 is largely due to a falling off in the inhabitants of Yandoon town, the trade of which was killed by the opening of the railway to Mandalay. Elsewhere the growth during the decade in question has been conspicuous, being largely due to the attractions presented by the rich delta areas to the inhabitants of the poorer tracts farther north. The stream of immigration flows mainly from the Districts of Magwe, Myingyan, Mandalay, Pakokku, and from the Upper and Lower Chindwin. By far the greater part of the population is Buddhist; in 1901 Musalmāns numbered 3,500 and Hindus 4,800. In all 200,000 of the population spoke Burmese, and 70,000 Karen.

Township.	Area in square miles.	Number of Towns.	Number of Villages.	Population in 1901.	Population per square mile.	Percentage of variation in population between 1891 and 1901.	Number of persons able to read and write.
Ma-ubin	522	1	118	77,792	149	+ 58	21,800
Pantanaw	483	1	92	62,374	129	+ 29	16,416
Yandoon	331	1	81	57,923	175	− 1	14,285
Danubyu	305	1	127	85,033	278	+ 39	18,087
District total	1,641	4	418	283,122	173	+ 30	70,588

Race and occupation.

Between two-thirds and three-fourths of the population are Burmans; of the balance the greater part is made up of Karens, who numbered 70,000 in 1901, forming nearly half of the population of the Pantanaw township, one-fourth of that of the Yandoon township, and a fifth of that of the Ma-ubin township. Not quite 60 per cent. of the population is agricultural. Owing to territorial changes it is not possible to show from the census figures the occupations of the remainder, most of whom are doubtless petty traders or fishermen.

Christian missions.

The native Christian population in 1901 numbered 5,100 (mainly Karen converts). The American Baptist Mission works among the Karens (Pwos and Sgaws), and Roman Catholic missionaries labour at Ma-ubin and Yandoon. Both these missions maintain schools.

General agricultural conditions.

The soil is a stiff yellow clay, deficient in lime, but well adapted to the cultivation of rice. It is so rich that systematic ploughing is rarely resorted to. Large areas, especially in the inundated tracts, are not ploughed at all, but the long grass is cut down and burnt, and the rice sown broadcast with-

out transplanting. The lands along the margins of the rivers, enriched by an annual deposit of silt, produce tobacco, chillies, and other crops. The whole of the Danubyu and most of the Ma-ubin township, with parts of Pantanaw and Yandoon, are protected by embankments. The largest of these is the Ma-ubin Island embankment, nearly 80 miles in length, which encloses a large area to the west of the town of Ma-ubin. A somewhat smaller area to the east is protected by the Thongwa Island embankment, between 30 and 40 miles in length. In the north of the District is the southern end of the Henzada embankment, which extends along the western bank of the Irrawaddy for nearly 40 miles, ending near the town of Pantanaw. The area thus protected is approximately 360 square miles. On unprotected lands the deposit of silt is artificially increased by cutting channels through the high banks, at right angles to the river, to the low-lying country beyond. This artificial raising of the level enables crops to be grown on stretches which would otherwise be too low for cultivation.

Chief agricultural statistics and principal crops.

The cropped area increased from 312 square miles in 1890–1 to 562 in 1900–1. For 1903–4 the main agricultural statistics (in square miles) are as follows:—

Township.	Total area.	Cultivated.	Irrigated.	Forests.
Ma-ubin . .	522	216	0·2	20
Pantanaw . .	483	125	0·1	
Yandoon . .	331	109	0·3	
Danubyu . .	305	178	0·4	
Total	1,641	628	1	20

The area under rice (all *kaukkyi*) in 1903–4 was 533 square miles, and that under plantains and other fruit trees 17,000 acres. Tobacco, mostly in Danubyu, covered 3,500 acres, and chillies in Pantanaw 6,300 acres. The average rice holding measures a little over 20 acres. Holdings are smaller in the north than in the south.

Cattle, &c.

There is a certain amount of cattle-breeding. Few ponies are kept, as there is little use for them. Reserves for grazing are more than 45,000 acres in extent.

Fisheries.

The fisheries are usually in fresh-water lakes and streams connected with the Irrawaddy, and subject to tidal influence, but affected to a much greater extent by the monsoon floods. They are mostly in the southern townships of Pantanaw and Ma-ubin. All but a small part of the revenue is derived from leased fisheries, which realized more than 7½ lakhs in

1903–4, almost one-third of the total revenue of the Province from this source. The waters leased are carefully demarcated and mapped, and the right to fish is let by auction every three years. Licences for netting are also issued and are made use of in the navigable waterways. These yielded in the same year Rs. 12,800. The leased fisheries are usually worked by means of weirs and bamboo traps. An exhaustive inquiry made by Major Maxwell between 1897 and 1899 resulted in the larger fisheries being subdivided, and none now yields much over Rs. 7,000 a year. The fresh fish is taken to Rangoon and other places by boat. A great deal is made into fish-paste (*ngapi*), and exported to all parts of Burma. The industry has declined with the spread of cultivation, the rule being that where the interests of the fisherman and the cultivator are irreconcilable those of the former must yield. The construction of embankments, the chief enemy of the fisherman, has now probably reached its limit, and to avoid disputes the spheres of interest of the fisherman and the cultivator have been delimitated. The fisherman's average profits are lower than the cultivator's, partly because the industry is highly speculative and, though the takings are occasionally enormous, losses are very common; partly because fishing is the hereditary occupation of the earlier Talaing inhabitants, who cling to it for sentimental reasons. The fisheries are looked after by a special staff of two *inkunwuns* and four inspectors.

Forests.

The forests are unimportant, consisting of five small Reserves in the Yandoon subdivision, with an area of only 20 square miles.

Arts and manufactures.

No artistic work is produced in the District. The manufacture of fine mats from the reed called *thin* (*Phrynium dichotomum*) gives employment to a number of women in the north. The reed, after being steeped in water, is split and the rind peeled off in two layers. The outer rind is smoother than the rest and is woven separately into a fine mat, under which a coarser one, made of the inner rind, is placed. The two are then tacked together and the result is the *thinbyu*, the Burman's ordinary bed. A smart mat-weaver can turn out a mat 6 feet by 2½ feet in one day. A few rice-mills are worked in the District.

Commerce and trade.

The principal exports are rice, fish-paste (*ngapi*) dispatched from Yandoon to all parts of Burma, and horns and hides. They are practically all river-borne. A good deal of firewood goes to Rangoon. The imports consist for the most part of hardware, piece-goods, and kerosene oil.

In 1903-4, 48 miles of metalled roads and 18 miles of unmetalled roads were maintained from the District cess fund. In addition, a number of unmetalled roads are kept up from Provincial funds, but the numerous waterways provide the chief communications. The majority of the larger creeks and streams, with which the southern areas are intersected, are navigable by light-draught steamers, launches, and boats. Ma-ubin is well served by the steamers and launches of the Irrawaddy Flotilla Company, and to a small extent also by launches and boats belonging to natives. There are 14 licensed ferries. **Means of communication.**

For administrative purposes the District is divided into two subdivisions: Ma-ubin, comprising the MA-UBIN and PANTANAW townships; and Yandoon, comprising the YANDOON and DANUBYU townships. These are under the usual executive officers, assisted by 422 village headmen. The District forms a subdivision of the Myaungmya Public Works division, and is included in the Henzada-Thongwa Forest division. **District subdivisions and staff.**

Ma-ubin forms part of the Delta (judicial) Division, and the Divisional Judge tries sessions cases. Till recently the judicial work was performed by the executive staff; but the new scheme has provided a special District Judge, with head-quarters at Myaungmya, who exercises jurisdiction in Ma-ubin, Myaungmya, and Pyapon, a subdivisional judge for Ma-ubin, and three township judges, one for Ma-ubin, one for Pantanaw and Yandoon, and one for Danubyu. The crime of the District presents no special features. **Civil justice and crime.**

The method of assessing land revenue under the Burmese régime varied in different localities, but the recognized demand was based on the number of yoke of plough cattle used by the cultivator, and amounted to about half the gross out-turn. The first settlement was made in 1868, when a uniform rate of Rs. 1-12-0 per acre was levied on all classes of cultivation in the Danubyu township. In 1869-70 further portions of the District were settled. The rates of assessment then imposed ranged from Rs. 1-4-0 to Rs. 2-4-0 per acre, according to the distance of the land from Rangoon, and the fertility of the soil. In 1879-80 these were summarily enhanced in certain circles by amounts varying from 6 to 25 per cent.; and in 1889-91 the rates ranged from Rs. 1-8-0 to Rs. 2-8-0. The first regular settlement of the whole District was made between 1888 and 1891, when rates were fixed ranging from Rs. 1-8-0 to Rs. 3 per acre for rice cultivation, and from Rs. 2 to Rs. 3 for orchards; vegetables, tobacco, &c., were assessed at Rs. 2 an acre. **Revenue administration.**

The following table shows, in thousands of rupees, the growth of the District revenue since 1881:—

	1880-1.	1890-1.	1900-1.	1903-4.
Land revenue . . .	3,00	6,00	8,00	9,53
Total revenue . . .	14,00	15,00	16,00	26,64

Local and municipal government.

The District cess fund is made up of a rate of 10 per cent. on the land revenue, with receipts from markets and other sources, bringing the total to 1·4 lakhs in 1903-4. About a fourth of this is contributed to Provincial funds, and Rs. 17,300 is spent on education, Rs. 10,000 on District launches, Rs. 13,500 on postal communications, Rs. 5,300 on hospitals, and the balance mostly on roads and rest-houses. YANDOON and MA-UBIN are municipalities, and DANUBYU is managed by a town committee.

Police and jails.

Under the District Superintendent of police are 2 Assistant Superintendents in charge of the two subdivisions, with a subordinate force consisting of 4 inspectors, 7 head constables, 30 sergeants, and 203 constables, distributed in 6 police stations and 8 outposts. The total strength of military police is 155 of all ranks, with 3 native officers. Of these 90 are stationed at the District head-quarters, the rest being distributed at the three outlying township head-quarters; their duties are mainly the escort of prisoners and treasure.

Ma-ubin possesses a District jail, with accommodation for 389 prisoners. The usual industries are carried on, but special reference may be made to the manufacture of jute money-bags, which are supplied by Ma-ubin to all the Government treasuries in the Province. The jail is almost self-supporting, as it grows its own rice and manufactures its own *ngapi*.

Education.

The percentage of literate persons in Ma-ubin District in 1901 was 41 in the case of males and 7 in that of females, or 25 for both sexes, which for a delta District with a considerable Indian immigration is fairly high. In 1904 the District contained 11 secondary, 185 primary, and 167 elementary (private) schools, with a total attendance of 7,394 boys and 1,377 girls. The expenditure on education amounted to Rs. 28,600, including Rs. 17,300 from Local funds, Rs. 4,300 from municipal funds, Rs. 5,100 from fees, and Rs. 1,700 from Provincial funds. Subscriptions amounted to only Rs. 200.

Hospitals and dispensaries.

There are hospitals at Ma-ubin, Yandoon, and Pantanaw, and a dispensary at Danubyu. The hospitals have accommodation for 52 in-patients. In 1903 the number of cases treated

was 22,420, including 659 in-patients, and 873 operations were performed. The income amounted to Rs. 11,000, towards which municipal funds contributed Rs. 8,000, and the District cess fund Rs. 2,500.

Vaccination is compulsory within the limits of the Yandoon and Ma-ubin municipalities. In 1903-4 the number of successful vaccinations was 6,136, representing 13 per 1,000 of population. Vaccination.

[H. M. S. Mathews, *Settlement Report* (1893); Major F. D. Maxwell, *Report on Inland and Sea Fisheries* (1904); B. Samuelson, *History of Embankments, Henzada Division* (1899).]

Ma-ubin Subdivision.—Subdivision of Ma-ubin District, Lower Burma, consisting of the MA-UBIN and PANTANAW townships.

Ma-ubin Township.—Township of Ma-ubin District, Lower Burma, lying between 16° 30′ and 16° 56′ N. and 95° 27′ and 95° 52′ E., with an area of 522 square miles. The head-quarters are at MA-UBIN (population, 6,623), also the head-quarters of the District. In addition to the town of Ma-ubin it contained 118 villages in 1901, and at the Census of that year had a population of 77,792, compared with 48,200 in 1891. The township, which is a dead level throughout, lies in the heart of the delta country, being bounded on the west by the Irrawaddy and traversed by the To or China Bakīr river. The great majority of the population are Burmans, about one-fifth being Karens. The area cultivated in 1903-4 was 216 square miles, paying Rs. 3,44,000 land revenue.

Pantanaw Township.—Township in Ma-ubin District, Lower Burma, lying between 16° 45′ and 17° 14′ N. and 95° 15′ and 95° 38′ E., with an area of 483 square miles. It is cut up by a network of small streams, connected with the Irrawaddy, which are leased as fisheries. The population was 48,204 in 1891 and 62,374 in 1901. Karens form between one-third and one-half of the total. It contains one town, PANTANAW (population, 5,010), the head-quarters, and 92 villages. In 1903-4 the area cultivated was 125 square miles, paying Rs. 1,70,000 land revenue.

Yandoon Subdivision.—Subdivision of Ma-ubin District, Lower Burma, consisting of the YANDOON and DANUBYU townships.

Yandoon Township.—Northern township of Ma-ubin District, Lower Burma, lying between 16° 51′ and 17° 15′ N. and 95° 35′ and 95° 55′ E., to the east of the Irrawaddy, with an area of 331 square miles. The head-quarters are at YANDOON

(population, 12,779). The population was 58,508 in 1891 and 57,923 in 1901, Karens forming about one-fourth of the total. The number of villages is 81. In 1903-4 the cultivated area was 109 square miles, paying Rs. 1,60,000 land revenue.

Danubyu Township.—Northernmost township of Ma-ubin District, Lower Burma, lying between 17° 0′ and 17° 25′ N. and 95° 24′ and 95° 45′ E., with an area of 305 square miles. The Irrawaddy passes down its entire length, forming the greater part of its eastern border. DANUBYU (population, 6,137), the head-quarters, stands on the western or right bank of the river. The whole township is level. Its low areas are protected by embankments and very fertile, and the density of population is higher than that of any other township in the District. In 1901 the township contained 127 villages and a population of 85,033, having risen from 60,920 in 1891. In 1903-4 the cultivated area was 178 square miles, paying Rs. 2,79,000 land revenue.

Danubyu Town.—Head-quarters of the township of the same name in Ma-ubin District, Lower Burma, situated in 17° 15′ N. and 95° 38′ E., on the west bank of the Irrawaddy. Population (1901), 6,137. The affairs of Danubyu are managed by a town committee, consisting of eight members. The revenue of the town fund in 1903-4 was Rs. 24,000, and the expenditure Rs. 27,000. Under Burmese rule, Danubyu was a post of some strategic importance, and in the first Burmese War a stubborn resistance was offered by its garrison to the British advance up the Irrawaddy. Here in 1825 the career of Mahā Bandula, the Burmese generalissimo, was terminated by a shell from the British guns. During the second Burmese War, Danubyu was occupied by the Burmans, but was evacuated on the approach of the invading force. The remains of the old Burmese fort are still to be seen. The town possesses a dispensary and a good Anglo-vernacular school, and enjoys some local fame for the manufacture of *thinbyu* mats and cheroots.

Ma-ubin Town.—Head-quarters of the District of the same name in Lower Burma, situated in 16° 44′ N. and 95° 42′ E., along the right bank of the China Bakīr stream, in the heart of the delta country. Population (1901), 6,623. Approximately three-quarters of the population are Burmans. Hindus number rather less than a thousand, and Musalmāns are about half as numerous as Hindus. The town is of comparatively recent creation and had achieved no notoriety before 1874, when it was chosen as the head-quarters of the new delta District of Thongwa. It is flat and barely above flood-level, and during

the greater part of the year swarms with mosquitoes. The jail and the usual public buildings stand near the river bank. Ma-ubin was constituted a municipality in 1888. The receipts of the municipal fund during the ten years ending 1900–1 averaged Rs. 24,500, and the expenditure Rs. 24,600. In 1903–4 the municipal income amounted to Rs. 54,000, the chief sources being markets, &c. (Rs. 18,000), and area and frontage tax (Rs. 2,500); and the expenditure amounted to Rs. 34,000, including conservancy (Rs. 7,300), hospital (Rs. 4,500), and education (Rs. 2,500). The principal schools are those maintained by the American Baptist and Roman Catholic Missions, while the municipality keeps up a hospital. Ma-ubin is one of the principal ports of call in the delta for the steamers of the Irrawaddy Flotilla Company, and is a thriving trade centre for paddy and *ngapi*.

Pantanaw Town.—Head-quarters of the township of the same name in Ma-ubin District, Lower Burma, situated in 16° 59′ N. and 95° 31′ E., on the banks of the Pantanaw river, one of the deltaic branches of the Irrawaddy. Population (1901), 5,010. The town has long been a flourishing centre of the trade in fish and *ngapi*, but, owing to the silting up of the channel on which it stands, its prosperity now seems to be on the wane. The affairs of Pantanaw were at one time managed by a town committee, but in 1897 the town fund was abolished. There is a hospital with ten beds.

Yandoon Town (Burmese, *Nyaungdon*, 'Banyan log or stump').—Head-quarters of the subdivision and township of the same name in Ma-ubin District, Lower Burma, situated in 17° 3′ N. and 95° 41′ E., about 60 miles north-west of Rangoon, on the left or east bank of the Irrawaddy at the junction of that stream with the Panhlaing creek. In 1891 Yandoon had a population of 20,235. Since then its numbers have decreased and the Census of 1901 disclosed a total of only 12,779, or practically the population of 1881. The decrease may be attributed to erosion by the river, which has carried away a part of the town, and to the shifting of trade, which has resulted in immigration to more lucrative fields of labour lower down the delta. Natives of India constituted rather more than 10 per cent. of the population in 1901. Yandoon was created a municipality in 1884. The receipts of the municipal fund during the ten years ending 1900–1 averaged Rs. 48,000, and the expenditure Rs. 50,000. In 1903–4 the municipal income was Rs. 46,000, chiefly derived from markets (Rs. 26,300) and conservancy tax (Rs. 5,400); and the expenditure was Rs. 52,000, including

conservancy (Rs. 6,300), roads (Rs. 14,000), and hospital (Rs. 4,300). The municipal hospital has twenty beds. Yandoon is the chief centre in the District for the export of *ngapi* or fish-paste to all parts of Burma.

Boundaries, configuration, and river system.

Pyapon District.—A seaboard delta District in the Irrawaddy Division of Lower Burma, lying along the Gulf of Martaban, between 15° 40′ and 16° 41′ N. and 95° 6′ and 96° 6′ E., with an area of 2,137 square miles. In shape it is a truncated triangle, the sides being the Irrawaddy on the west and the To or China Bakīr river on the east, while the base is formed by the sea-coast, which has a general south-west to north-east direction. It is bounded on the east by Hanthawaddy District; on the west by Myaungmya; and on the north by Ma-ubin. The entire area consists of a vast plain, intersected by tidal creeks and waterways. With the exception of some very small areas called *kondans*, the whole of this level is subject to inundation at high spring-tides, and a good deal is submerged throughout the monsoon period. The *kondans* are narrow strips of land, about 4 to 10 feet above the level of the plain, on which the soil is dry and sandy. They are supposed to be the remnants of old sea-beaches. The rivers are all tidal, and form the south-eastern portion of the network of water by which the Irrawaddy finds its way into the Gulf of Martaban. That river, running southwards to the sea, bounds the District on the west, except in one place where Myaungmya District extends east of the stream. It is navigable by river craft at all seasons of the year. The To river (or China Bakīr) takes off from the Irrawaddy in Ma-ubin District, and runs in a south-easterly direction, separating Pyapon from Hanthawaddy. Four miles below Dedaye it spreads into a secondary delta, its two western branches being called the Donyan and Thandi rivers, both wide but of little importance. Into the To river itself (the eastern branch), at the extreme south-east corner of the District, flows the Thakutpin or Bassein creek, a tidal waterway which gives river communication with Rangoon. In Ma-ubin District, about 20 miles below the point where the To river leaves the Irrawaddy, the Kyaiklat river branches off from the To, and flows in a southerly direction, past Kyaiklat and Pyapon, into the sea. In the latter part of its course it is called the Pyapon river. A few miles below Kyaiklat the Gonnyindan stream takes off from the Kyaiklat river, and flows first south-west as far as Bogale, where it is connected by various creeks with the Irrawaddy, and thence almost due south into the sea at Pyindaye, under the name of the Dala river. Its lower reaches are

separated from those of the Irrawaddy by two large islands which are covered with fuel reserves. Besides these more important channels, the District possesses countless tidal creeks, the Uyin, the Podok, the Wayakaing and others, which convert it into a maze of muddy channels.

Geology and botany. The geological and botanical features of Pyapon are the same as are noticed under HANTHAWADDY DISTRICT. The soil is mainly alluvium and the jungle vegetation is largely swamp.

Fauna. The tiger and the elephant are practically confined to the uncleared areas in the south, where there are also herds of wild buffalo, wild hog, and hog deer. Crocodiles are not uncommon in the creeks, and turtles abound at certain seasons of the year on the sandbanks along the southern coast.

Climate, temperature, and rainfall. The climate, though damp and depressing, is healthy, and the proximity of the sea renders the temperature equable. The average minimum temperature throughout the year is about 65°, the average maximum 95°, and the average mean about 80°. One of the results of the proximity of the Gulf of Martaban is that the winds are decidedly stronger than farther inland. The country enjoys a regular and copious rainfall, rather in excess of the mean for the delta. The annual average is about 95 inches, decreasing towards the north in the areas farthest removed from the coast.

History and archaeology. The District as at present constituted is of modern creation, having been taken in 1903 from Thongwa (now Ma-ubin) District, which itself only dates back to 1875. Until recent times the country was a stretch of unreclaimed jungle, the only indications of an earlier civilization being in the south-west. The village of Eya, from which the Irrawaddy takes its name, is now an insignificant hamlet, though it must have been a place of no little repute in bygone days. Of historical remains there are practically none. The most ancient and revered pagoda is that known as the Tawkyat at Dedaye, and even this is supposed to be not more than a hundred years old.

The people. Owing to various minor alterations in the township boundaries, exact figures for the population of the area now composing the District are not obtainable for past years. In 1881 the whole District formed little more than a single township of Thongwa, with a population of about 97,000. In 1891 this total had increased to about 139,000, and in 1901 had risen to 226,443, a rate of growth exceptional even for Burma.

The distribution according to the Census of 1901 is shown in the table on the next page.

The only towns are PYAPON, the head-quarters of the District, KYAIKLAT, and DEDAYE. The increase in the northern part has been normal; but in the two southern townships the growth of population has been extraordinarily rapid, reaching 350 per cent. in the seaboard township of Bogale. Its rapidity is due to immigration into the low-lying waste areas, where fresh land is constantly being brought under the plough. The influx has been mainly from Hanthawaddy and Henzada in Lower Burma, and Minbu, Myingyan, and Mandalay in Upper Burma; but Indian immigrants are also numerous. Though the inland portions are densely populated, the southern tracts washed by the sea have comparatively few inhabitants, large areas in fact being absolutely uninhabited. Burmese is spoken by 200,000 of the inhabitants, and Karen by 15,000.

Township.	Area in square miles.	Number of		Population in 1901.	Population per square mile.	Percentage of variation in population between 1891 and 1901.	Number of persons able to read and write.
		Towns.	Villages.				
Pyapon	431	1	157	43,922	102	+ 80	16,598
Bogale	1,057	...	272	43,756	41	+ 350	25,680
Kyaiklat	277	1	394	71,770	259	+ 51	20,100
Dedaye	372	1	312	66,995	180	+ 18	19,552
District total	2,137	3	1,135	226,443	106	+ 63	81,930

Race and occupation.

Burmans form 88 per cent. of the total population. Karens, numbering about 15,000, inhabit the northern portions, especially the Kyaiklat township. The Indian population is made up of about 2,100 Musalmāns and 6,600 Hindus, and is increasing steadily. The number of persons dependent upon agriculture is 74 per cent. of the total population. The number of fishermen is large.

Christian missions.

Till recently there have been no Christian missionaries at work, though a considerable body of Karen converts live in the Kyaiklat and Bogale townships. The number of Christians in 1901 was about 4,900. Of these 4,800 were native Christians, most of whom were Baptists.

General agricultural conditions.

The soil resembles that common to the other lower delta Districts of the Province. It is a stiff homogeneous clay, deficient in lime, but admirably adapted to rice cultivation. The greater part of the cultivated area is inundated, and a considerable portion is but seldom systematically ploughed, the long *kaing* grass with which it is covered being cut down and burnt, and the rice sown broadcast. As the rivers deposit

large quantities of silt, the land in the immediate neighbourhood of their channels is at a higher level than the interior. During the rains the country consists to a large extent of vast lakes, in which patches of higher ground appear as islands. Large areas of land between the main rivers lie too low for rice cultivation, and remain untilled swamps.

The main agricultural statistics for 1903–4 are as follows, areas being shown in square miles :— Agricultural statistics and principal crops.

Township.	Total area.	Cultivated.	Forests.
Pyapon . .	431	191	558
Bogale . .	1,057	155	
Kyaiklat . .	277	219	
Dedaye . .	372	270	
Total	2,137	835	558

Accurate statistics of the area cultivated in years previous to 1903–4 are not available. It is estimated that in 1891 about 350 square miles were cropped, and this area had increased to 769 square miles by 1901. In 1903–4 rice covered 822 square miles of the total. No harvest but *kaukkyi* (wet-season) rice can be grown. A certain amount of garden cultivation is carried on near the river-banks on the richer soil in the northern parts of the District, in Kyaiklat and Dedaye. The gardens cover 3,100 acres, the greater part being plantains, though coco-nut and betel-nut palms are also grown. The *dani* palm is cultivated along the sides of the creeks, in the southern parts of the District especially, covering 5,000 acres. The cultivation of tobacco is insignificant.

Little is done to improve the systems of cultivation. Loans are not required for agricultural purposes, although they are taken by the cultivating classes from money-lenders for all sorts of extravagances, with the result that land is gradually passing into the hands of non-resident landlords. The large area of cultivable land still unoccupied and the scarcity of labour keep rents low at present, but the time is not far off when these conditions wiil be less favourable. Improvements in agricultural practice.

Domestic animals are not bred in any number: they are usually imported, largely from Upper Burma. The moist climate and the swampy character of the land cause buffaloes to be used in preference to kine, as a rule. Goats are few, and ponies are rarely kept, owing to the poverty of land communications. Cattle, &c.

The numerous fisheries, which have been described in con- Fisheries.

siderable detail in a recent report by Major F. D. Maxwell, yielded a revenue of more than $1\frac{3}{4}$ lakhs in 1903-4. The most important of the inland fisheries lie in the north of the District, in the area enclosed by the To, the Kyaiklat, and the Podok streams. A considerable portion of the out-turn leaves Pyapon in the shape of *ngapi* (fish-paste). Turtle-beds abound along the sea-coast in the south, and yield large numbers of turtle-eggs annually. The variety of turtle found is that known as the loggerhead ; the green turtle does not frequent the Pyapon banks, of which the two best known are the Thaungkadun and the Kaingthaung.

Forests. A considerable stretch of 'reserved' forests occupies 558 square miles in the southern portion of the Bogale township. The forests have been reserved chiefly as a precaution against scarcity of fuel in the future ; they are tidal and contain no timber trees of any value. The chief forest trees found in them are the *kyanan* (*Xylocarpus Granatum*,) the *kanazo* (*Heritiera minor*), the *kanbala* (*Sonneratia apetala*), the *pyu* (*Rhizophora conjugata*), the *laba* (*Bignonia*), and the *tamu* (*Sonneratia acida*), all tropical mangrove forest trees. The *thinbaung* (*Phoenix paludosa*), a small palm, grows freely in the District, and is largely used for building purposes. On the coast a common species is the *tayaw* (*Excoecaria Agallocha*). The *dani* palm (*Nipa fruticans*) and the *danon* (*Calamus arborescens*) abound, and are extensively used for thatching. The receipts from the extraction of cane and other minor forest products amounted in 1903-4 to Rs. 12,700.

Arts and manufactures. Within recent years attempts have been made to establish rice-mills in the District. At present five are working in the neighbourhood of the principal towns, but it remains to be seen whether they will prove remunerative. Besides rice-milling and the preparation of *ngapi* no manufactures of importance are carried on, and no arts are practised.

Commerce and trade. Paddy and *ngapi* are exported, the first mainly to Rangoon, the latter principally to Upper Burma. Horns, hides, and firewood are sent to Rangoon, the latter in very considerable quantities. The imports comprise the usual necessaries of an agricultural population—silk and cotton goods, kerosene oil, sugar, salt, jaggery, pickled tea, areca-nuts, hardware, and crockery. The trade is all carried by water, and a large share of it is in the hands of the Irrawaddy Flotilla Company.

Communications. The network of rivers and creeks spreading over the District gives ample means of communication, both internal and external. Outside the towns there are no roads, but a

beginning will shortly be made in road-making. Launches ply daily between Rangoon and Pyapon via Dedaye and Kyaiklat, between Yandoon (in Ma-ubin District) and Pyapon via Ma-ubin and Kyaiklat, and between Kyaiklat and Bogale via Pyapon. Bi-weekly steamers run from Rangoon to Moulmeingyun in Myaungmya District through Dedaye, Kyaiklat, Pyapon, and Bogale, as well as from Rangoon to Kyaikpi, in Myaungmya District, and to Pyindaye in the dry season. All these services are maintained by the Irrawaddy Flotilla Company. The waterways swarm with native craft, and at most of the principal towns ferries across the rivers are controlled by Government.

District subdivisions and staff.

The District is divided into two subdivisions: Pyapon, comprising the PYAPON and BOGALE townships; and Kyaiklat, comprising the KYAIKLAT and DEDAYE townships. These are staffed by the usual executive officers, under whom are 393 village headmen and 4 circle *thugyis*. For public works purposes the District forms a subdivision of the Myaungmya division, which also includes Ma-ubin and Myaungmya Districts. The forests lie within the Henzada-Thongwa Forest division, the head-quarters of which are at Henzada.

Civil justice and crime.

Pyapon is in the jurisdiction of the Judge of the Delta Division, who tries sessions cases. The civil work of the District is dealt with by a District Judge, who has his head-quarters at Myaungmya, and also has jurisdiction in Ma-ubin District. Two officers have been appointed judges of the Bogale-*cum*-Pyapon and the Kyaiklat-*cum*-Dedaye township courts respectively, to relieve the township officers of civil work. Otherwise the local executive officers preside over their respective courts, civil and criminal. As in other parts of the delta, crime is considerable, burglaries, thefts, and serious assaults being common. Violent crime, such as dacoity and robbery, is more rife than in the non-delta Districts, but shows signs of diminution. Cattle-thieving, an important profession in the Districts north and east of the delta, is not common, the reason being that the conformation of the country does not lend itself to the operations of the cattle-lifter. In a large number of cases of serious hurt clasp-knives are used, and special efforts are being made to bring about a diminution of this form of crime.

Revenue administration.

Under Burmese rule the method of assessment was, as in the rest of the delta Districts, based on the number of yoke of plough animals used by the cultivator, amounting roughly to half the gross out-turn. In 1868 acre rates were introduced,

varying from R. 1 to Rs. 2-4-0 per acre, and these continued in force till 1891-2, when the greater part of the District was brought under settlement. Nearly the whole of the Bogale township was omitted from this settlement, the few cultivated patches in the huge jungle spreading over this township continuing to be taxed at a uniform rate of Rs. 2-4-0 per acre. Over the rest of the District rice land was assessed at rates varying from Rs. 1-12-0 on the poorest inundated lands to Rs. 3 on lands which were always certain of good crops, the average being Rs. 2-6-0. Miscellaneous crops were taxed at the uniform rate of Rs. 2, and orchards at a uniform rate of Rs. 3 per acre, except in a few restricted localities where the rate was only Rs. 2-4-0. Finally, in 1901-2 the Bogale township was brought under settlement, and the following rates were fixed: on rice land, from Rs. 2-8 to Rs. 5 per acre; on miscellaneous cultivation, Rs. 2-4-0; on orchards, Rs. 2-4-0; on betel-vines, Rs. 10; on *dani* palms, Rs. 5 per acre. Rapid as has been the growth of population and cultivation, it has been slower than that of the revenue. The following table shows, in thousands of rupees, the development of the latter since 1880-1:—

	1880-1.	1890-1.	1900-1.	1903-4.
Land revenue . . .	2,00	5,00	12,00	12,27
Total revenue . . .	7,00	12,00	19,00	20,94

The total revenue in 1903-4 included Rs. 2,11,000 from capitation tax, Rs. 1,86,000 from fisheries, and no less than Rs. 2,86,000 from opium and excise.

Local and municipal government.

The income of the District cess fund, derived mainly from a 10 per cent. cess on the land revenue, and applied to various local needs, amounted to 1·4 lakhs in 1903-4. The only municipality is PYAPON. KYAIKLAT is at present under a town committee, but is shortly to be constituted a municipality.

Police and jails.

The District Superintendent of police has the services of two Assistant Superintendents, who are in charge of the subdivisions of Kyaiklat and Pyapon. Under these officers are 4 inspectors, 6 head constables, 26 sergeants, and 134 constables. No mounted men are maintained, but 2 sergeants and 12 men are employed in boats. The civil police are distributed in 5 police stations and 4 outposts, as well as at head-quarters. The military police number 150, of whom 80 are at head-quarters, 25 at Kyaiklat, 15 each at Dedaye and Bogale, and 15 at Kyonmange on the To river, about 9 or 10 miles above

Dedaye. No jail has been built at Pyapon, and prisoners are sent on conviction to the Ma-ubin jail.

The percentages of males and females able to read and write in 1901 were returned at 52 and 9 respectively, the proportion for both sexes being 36; but in reality the condition of education is decidedly backward, and the people are apathetic. The weakness of the schools is particularly marked in the case of the monastic seminaries, and is attributed to the loss of influence due to the deterioration in character of the *pongyis*. The lay schools are at present somewhat disorganized, but the recent improvement which has taken place in the position of lay teachers will, it is hoped, bring about an improvement in this class of education. The most important Buddhist lay schools are at Pyapon and Kyaiklat; and the most advanced monastic seminaries are those at Bogale, Dedaye, Thegon, and Kyaiklat, which teach up to the middle school standards. In 1904 the District contained 6 secondary, 101 primary, and 180 elementary (private) schools, with an attendance of 5,111 boys and 991 girls. The public expenditure on education amounted to only Rs. 7,000. This total included Rs. 4,800 from the District cess fund and Rs. 2,200 from the Pyapon town fund. Education.

There are three hospitals and a dispensary, with accommodation for 46 in-patients. In 1903 the number of cases treated was 18,733, including 692 in-patients, and 339 operations were performed. The income amounted to Rs. 10,500, all but Rs. 500 from subscriptions being derived from the District cess fund. Hospitals.

In 1903–4 the number of successful vaccinations was 1,883, representing 9 per 1,000 of the population. Vaccination.

[H. M. S. Mathews, *Settlement Report* (1893); Major F. D. Maxwell, *Report on Inland and Sea Fisheries* (1904).]

Pyapon Subdivision.—South-western subdivision of Pyapon District, Lower Burma, comprising the PYAPON and BOGALE townships.

Pyapon Township.—Township of Pyapon District, Lower Burma, lying between 15° 47′ and 10° 25′ N. and 95° 34′ and 95° 47′ E., with an area of 431 square miles. It is bounded on the north by the Gonnyindan river; on the east by the Pyapon river; on the south by the sea; and on the west by tidal waterways which separate it from the Bogale township. It is flat and typically deltaic throughout. The population increased 80 per cent. during the decade between 1891 and 1901, at the close of which period it had reached a total of 43,922, distributed in

one town, Pyapon (population, 5,883), the head-quarters of the township and District, and 157 villages. In 1903-4 the area cultivated was 191 square miles, as compared with 56 square miles in 1891. The land revenue was Rs. 3,75,000.

Bogale.—South-western township of Pyapon District, Lower Burma, lying between 15° 40′ and 16° 29′ N. and 95° 6′ and 95° 36′ E., with an area of 1,057 square miles. The whole area is low-lying and intersected by a labyrinth of tidal creeks. It is triangular in shape, with its base along the sea-coast, and only the northern portion, or about one-third of the whole, is cleared of jungle. Considerably more than half the township consists of forest Reserves, and the density of population is, in consequence, low. The population increased from 9,724 in 1891 to 43,756 in 1901, distributed in 272 villages, Bogale (population, 2,397), at the confluence of the Gonnyindan and Dala rivers, being the head-quarters. Pyindaye, the village from which the township formerly took its name, is situated close to the sea at the mouth of the Lala river, which traverses the township from end to end. In 1903-4 the area cultivated was 155 square miles, paying Rs. 2,34,000 land revenue.

Kyaiklat Subdivision.—North-eastern subdivision of Pyapon District, Lower Burma, comprising the Kyaiklat and Dedaye townships.

Kyaiklat Township.—Northern township of Pyapon District, Lower Burma, lying between 16° 23′ and 16° 41′ N. and 95° 26′ and 95° 54′ E., with an area of 277 square miles. The growth of population in the past has been rapid, but most of the township is now under cultivation, and the increase will probably slacken in the future. The population was 47,000 in 1891 and 71,770 in 1901, distributed in the latter year, at the rate of 259 persons per square mile, in one town, Kyaiklat (population, 7,774), the head-quarters, and 394 villages. Kyaiklat is flat and fertile. The area cultivated increased from 62 square miles in 1891 to 219 square miles in 1903-4, paying Rs. 2,37,000 land revenue.

Dedaye Township.—Eastern township of Pyapon District, Lower Burma, lying between 16° 8′ and 16° 29′ N. and 95° 43′ and 96° 6′ E., with an area of 372 square miles. It is triangular in shape, being bounded by the Pyapon and To rivers on the west and east respectively, and by the sea on the south. The population, which was 56,798 in 1891, has increased at the comparatively slow rate of 18 per cent. during the decade ending 1901, in the latter year reaching a total of 66,995, which was distributed at the rate of 180 persons per square mile over

312 villages and one town, DEDAYE (population, 5,193), the head-quarters, situated on the To river. The cultivated area increased from 155 square miles in 1891 to 270 square miles in 1903-4, paying Rs. 3,81,000 land revenue.

Dedaye Town.—Head-quarters of the township of the same name in Pyapon District, Lower Burma, situated in 16° 26′ N. and 95° 56′ E., on the right bank of the China Bakīr river, about 15 miles from its mouth. Population (1901), 5,193. The town is low-lying, and surrounded by paddy-fields. It contains the most important pagoda in the District, the Tawkyat. Lying on the main line of communication between Rangoon, Bassein, and Ma-ubin, it is a trade centre of some importance, but it has not yet been constituted a municipality or a 'notified area.'

Kyaiklat Town.—Head-quarters of the subdivision and township of the same name in Pyapon District, Lower Burma, situated in 16° 27′ N. and 95° 46′ E., on the right bank of the Kyaiklat river, one of the many minor branches of the Irrawaddy, opposite the mouth of the Podok creek. Population (1901), 7,744. It contains the usual public buildings and a hospital with sixteen beds. The affairs of Kyaiklat are managed by a town committee constituted in 1900, which will be shortly replaced by a municipal committee. The revenue of the town fund in 1903-4 amounted to Rs. 51,000, and the expenditure to Rs. 39,000, of which nearly half was devoted to public works.

Pyapon Town.—Head-quarters of the District of the same name in Lower Burma, situated in 16° 18′ N. and 95° 43′ E., in low-lying country on the right bank of the Pyapon river, one of the numerous outlets of the Irrawaddy, about 12 miles from the coast. Population (1901), 5,883. It was formerly the head-quarters of a subdivision, and did not become the District head-quarters till 1903. A fair proportion of the inhabitants are engaged in the fishing industry. Pyapon stands very little above the level of the river, which here runs between muddy banks. Its affairs were managed by a town committee from 1899 to 1905, when it was constituted a municipality. The revenue of the town fund in 1903-4 was Rs. 30,000 and the expenditure was Rs. 33,000, half of which was devoted to public works. Pyapon contains the usual public buildings, a hospital with eighteen beds, and several schools.

Boundaries, configuration, and hill

Henzada District (*Hinthada*).—Northernmost District of the Irrawaddy Division of Lower Burma, lying between 17° 20′ and 18° 31′ N. and 94° 48′ and 95° 47′ E., in the plain of the

and river systems. Irrawaddy, with an area of 2,870 square miles. It is irregularly triangular in shape, with its apex in the north at Akauktaung, a spur of the Arakan Yoma, touching the Irrawaddy 24 miles above Myanaung, and its base along the northern edges of Bassein and Ma-ubin. The Irrawaddy forms nearly the whole of its eastern border. Its western boundary is the forest-clad watershed of the Arakan Yoma, running north and south, which separates it from Sandoway and the coast. To the south of the District lie Bassein and Ma-ubin; to the north Prome. The District is in fact, with the exception of one circle in the south-eastern corner, contained between the Irrawaddy on the east and the barrier of the Arakan Yoma on the west. In the latitude of Myanaung the Arakan range exceeds 4,000 feet in altitude, but from this point southwards it rapidly diminishes in height. From the main ridge spurs run eastwards towards the Irrawaddy, one, in the extreme north of the District, ending in a conspicuous bluff about 300 feet in height, and washed at its base by the stream. As the river pursues its southerly course to the sea it bears away from the hills, leaving between its banks and the uplands the vast stretch of paddy-fields, 60 miles broad in the south, which forms one of the main features of the District. The hilly tract in the west, 12 to 20 miles in width, is characterized by steep slopes and dense tree-jungle. All the plains were up to modern times annually inundated by the Irrawaddy, but the greater portion of this area is now protected by an extensive system of embankments. The Irrawaddy, bounding the District on the east, sets in a general south-south-east course, and is navigable at all seasons by the largest river steamers. Numerous streams flow from the Yoma eastwards towards the Irrawaddy; most of them are entirely dry in the hot season, and nearly all are marked by precipitous banks and tortuous channels. During the rains, however, boats can ply on the lower reaches of their courses in the plains. Of these watercourses the Patashin is the only one of importance that joins the Irrawaddy itself, which it does just below Kyangin in the extreme north of the District. The rest drain into the Bassein (or Ngawun) river, which leaves the Irrawaddy about 9 miles above Henzada, and flows in a general south-westerly direction into Bassein District. The entrance, about 300 yards wide, is choked by a sandbank, which rises above the low-water level of the Irrawaddy. In the rains, however, the largest boats can cross this obstruction. Thirteen miles below this point the Bassein river is joined from the west by the Okpo or Kanyin stream, which rises in the Yoma and runs for about

60 miles through the Okpo township. This river is connected with the Irrawaddy by a channel known as the Thanbayadaing creek. A short distance below the mouth of the Kanyin the Bassein river is augmented by the waters of the Nangathu, formed of various streams from the Yoma, which unite and flow eastwards into the delta country.

The chief lakes are the Nyein-e in the Apyauk circle, the Duya and Eitpyet a few miles from Henzada, and the Tu in the Kanaung township. The last, the largest of the four, is 3 square miles in extent.

Geology. The plain is composed of alluvial deposits, which may be divided into an upper and a lower division. The lower consists of coarse gravels transported from a distance; the upper of a very homogeneous but somewhat arenaceous clay of a yellowish colour. The whole deposit has a southward slope exceeding in steepness that of the present surface. The Arakan Yoma in the west is formed by the Negrais rocks passing up into the Nummulitics. Intrusive rocks, which are mostly serpentine, occur in patches.

Botany. Like Tharrawaddy, Henzada differs from the true deltaic areas in having no mangrove swamps or tidal jungles. The main vegetation consists of deciduous forests, similar to those in PEGU DISTRICT, while bordering the Irrawaddy are open savannah forests, similar to those of HANTHAWADDY. The riparian vegetation is of the type in PROME. On the upper slopes of the Arakan Yoma are evergreen forests, which have not yet been botanically explored, but probably contain oaks, chestnuts, and species of *Dipterocarpus*.

Fauna. Tigers, leopards, and elephants are all found, the latter for the most part in the hills to the west. During the rains all of these animals confine themselves for safety to the rising ground, but in the dry season they not infrequently enter the plains, where they destroy cattle or rice according to their nature.

Climate, temperature, and rainfall. The cold season is short and mild, but the hot months are not very trying, and the means of the maximum and minimum temperatures registered during 1901 were 88° and 68° respectively. The rains usually begin about the end of May, and cease in the middle of October. They have never been known to fail altogether, but the quality of the crops depends upon the distribution of the monsoon. The annual rainfall averages 75 inches at Henzada town, and decreases, as the dry zone is approached, to 58 inches at Kanaung in the north, where there are occasionally complaints of lack of rain. Henzada is too far north to be in the immediate track of cyclones but destruc-

tive floods occur occasionally, though the embankments have largely removed the possibility of serious inundation.

History. Henzada or Hinthada derives its name from *Hintha*, the Burmanized form of the Pālī name for the Brāhmani goose. It formed part of the Talaing kingdom of Pegu which was annexed by Alaungpayā in 1755, but at no time apparently had it an independent political existence. There was no resistance in the District to the British advance on Prome during the first Burmese War. In the second War the Burmese troops, on hearing of the occupation of Prome, left their fortifications at Aukauktaung, at the extreme northern corner of the present District, and were defeated in an attempt to cross the river. This position was not occupied, however, by the British and was in time stockaded by the Burmans, who kept the country disturbed till the cutting up of a patrol under a British officer, Major Gardner, who was killed, led to the occupation of Akauktaung. Meanwhile the southern areas were in a still more disturbed state than the northern, in consequence, mainly, of the disbandment of the Burmese police. The rebels, led by one Nga Myat Tun, a hereditary *thugyi*, made marauding expeditions into Henzada, Bassein, and Ma-ubin, till they were dispersed at Danubyu in the last-named District. Since then, though crime has always been heavy, there have been no serious disturbances. The original Henzada District comprised a portion of the existing District of Ma-ubin and practically the whole of the present Tharrawaddy District, and its limits have been altered more than once in the past thirty years.

The people. The population at the last four enumerations was as follows: (1872) 256,753, (1881) 363,899, (1891) 437,620, and (1901) 484,558. The principal statistics of area and population in 1901 are given in the following table:—

Township.	Area in square miles.	Number of		Population.	Population per square mile.	Percentage of variation in population between 1891 and 1901.	Number of persons able to read and write.
		Towns.	Villages.				
Henzada	369	1	520	131,698	357	+ 11	4,394
Zalun	276	1	362	69,502	252	+ 18	18,349
Okpo	694	...	436	84,046	121	+ 14	21,080
Lemyethnā	438	1	354	60,314	138	+ 6	18,186
Kanaung	615	1	428	92,365	150	+ 16	23,089
Kyangin	478	1	243	46,633	98	+ 2	12,200
District total	2,870	5	2,343	484,558	169	+ 11	97,298

Henzada contains more towns than any other District in Burma, the urban population in 1901 being 54,500, which is more than 11 per cent. of the total, compared with 7 per cent. for the Irrawaddy Division as a whole. The towns are HENZADA, the head-quarters, ZALUN, KYANGIN, MYANAUNG, and LEMYETHNĀ. The density of population is very high for Burma. Burmese is the language of 418,000 of the inhabitants, while Karen is spoken by 44,000.

Race and occupation.

In 1901 the Burmans numbered 422,800, or 87 per cent. of the District total. The Talaings have become merged with the Burmans, and are scarcely represented at all. The Karens in 1901 numbered 45,800. They are distributed all over the District, except in the Kyangin township in the north, and form about one-fourth of the population of the southernmost township, Zalun, and one-seventh of that of Henzada. There are very few Shans, but the Chins on the hills in the west number 3,600, and retain their own language. They are commonest in the two northern townships. Buddhism is the religion of 468,800 persons, including both Chins and Karens; Musalmāns number rather more than 3,000, and Hindus exceed 4,000. The immigrants from India come almost entirely from Bengal and Madras. About half the Muhammadans and three-fourths of the Hindus reside in the municipalities. The number of persons dependent upon agriculture in 1901 was 341,600, or 70 per cent of the total, a figure higher than the Provincial average. *Taungya*-cutters numbered 5,000.

Christian missions.

The number of Christians (8,085) is comparatively large. Of these 8,000 are native Christians, the great majority being Karens. The Roman Catholics have several missionaries at work, mostly among the Karens, and a mission to the Chins at Yenandaung has been started recently. The American Baptists have 48 churches, and 42 vernacular schools, and also work mainly among the Karens.

General agricultural conditions.

The flatness of the greater part of the District and its position at the head of the Irrawaddy delta render it an area particularly suitable for rice. The whole of the plain was until recently flooded annually by the Irrawaddy, so that the soil is new alluvium, and the extensive system of protective embankments that has been introduced now shelters large areas under rice. Much land is still flooded, however, in the Okpo township north of the Bassein river, where it flows past the end of the Myanaung embankment; and in the Apyauk circle, on the eastern bank of the Irrawaddy, where it makes a sweeping curve from south-east to south-west. The Bassein

river, too, is confined only on its left bank, and floods a large portion of the Lemyethnā township lying west of it. On such lands, and in the low-lying *kwins* in the Henzada and Zalun townships, rice is sown broadcast, the floods frequently necessitating a second sowing; but over the rest of the District it is transplanted from nurseries after the rains have well set in. In the flooded portions of the Lemyethnā township a kind of rice called *kaukhnaung* is planted as late as October or November; and to ensure a crop the villagers dam one of the streams crossing the plain, and tap it by subsidiary channels so as to make it flow on to the various holdings. The *le* (plough) is rarely met with, the *tundon* (which resembles the harrow) being in general use for preparing the ground. Manuring is not uncommon, but as a rule the only fertilization that the land receives is from the annual burning of rice stubble in the fields. A very large area of garden cultivation lies on the Akauktaung hill, along the Patashin and Okpo rivers, on the high lands adjoining Myanaung and overlooking the Tu lake in the Kanaung township, and along the road from Neikban to Aingthabyu in the Henzada township.

Agricultural statistics and principal crops.

The main agricultural statistics for 1903-4 are shown below, areas being in square miles:—

Township.	Total area.	Cultivated.	Irrigated.	Forests.
Henzada . .	369	221	0.8	803
Zalun . . .	276	124	0.1	
Okpo . . .	694	136	...	
Lemyethnā . .	438	89	5.9	
Kanaung . .	615	149	0.2	
Kyangin . .	478	60	...	
Total	2,870	779	7	803

Rice covered 681 square miles in that year. This is a very considerable advance on the figures for 1881, when only 372 square miles were under rice. The increase has been largely the outcome of elaborate protective works. Henzada grows more tobacco than any other District in Burma, and the area under this crop (17 square miles) is extending yearly. Garden cultivation, including plantains, coco-nuts, pineapples, papayas, mangoes, and jack-fruit, increased from 23 square miles in 1881 to 56 square miles in 1903-4, the largest District total in Burma. Of this area the orchards of the Henzada and Kanaung townships occupy two-thirds. A total of 4,700 acres, for the most part in the Henzada, Kanaung, and

Kyangin townships, is under pulse (*pegyi*), a cold-season crop. Miscellaneous non-food crops are grown on 6,400 acres, for the most part in the Zalun and Henzada townships; and maize, gram, and sesamum cover about 1,000 acres each.

Improvements in agricultural practice.

Havana and various kinds of Indian tobacco have been tried, but hitherto without much success. The failure is attributed to the attraction these tobaccos have for insects, and to the necessity for greater care and attention than the ordinary Burmese husbandman is disposed to give to their cultivation. No use is made by the cultivators of the Agriculturists' Loans Act; they still prefer to have recourse to the local money-lender when in need of ready cash. A co-operative credit society has, however, been recently started under the provisions of Act X of 1904 at Apyauk, and has so far worked successfully.

Cattle, &c.

There are no local breeds of cattle in the District; buffaloes are numerous, but are not by any means as plentiful as kine. Ponies are scarce and of poor quality. Goats are bred almost exclusively by Indians. Cattle graze for the most part on the higher land not used for rice cultivation, and, in the dry season, along the river banks. Considerable difficulty is found, however, in the southern townships in providing sufficient grazing-grounds for the live-stock.

Embankments.

The embankments, designed to keep the floods back from the low-lying cultivated levels, are one of the main features of Henzada. The northernmost of these, the Kyangin embankment, on the right bank of the Irrawaddy in the north of the District, was begun in 1864 for the protection of Kyangin town and the paddy-fields behind it, along the line of a small embankment previously built by the Deputy-Commissioner. It is $6\frac{3}{4}$ miles long, and protects about 3,000 acres. The cost was a lakh and a half, and the net revenue from the land brought under cultivation by the work is less than 2 per cent. on the capital outlay; but the benefit the town derives from it has been, apart from this, sufficient to justify the undertaking.

The Myanaung embankment is practically a southern continuation of the last-named work, and was constructed about 1868. It extends down the western bank of the Irrawaddy for 39 miles, and protects nearly 100 square miles. It cost 11 lakhs and now yields a steady profit.

The Henzada embankment, which shelters a further stretch of the western bank of the Irrawaddy, was begun ih 1867, along the line of previous constructions made by the villagers

or from Local funds, and gradually extended southwards across the District border into Ma-ubin. Its construction has cost nearly 19 lakhs. The total length is 76 miles, and the area protected about 340,000 acres, of which 41 miles and 73,000 acres are within Henzada. In 1903-4 the net addition to the land revenue that resulted from its construction was 36 per cent. on the capital outlay. Floods in 1868 and 1877 caused widespread destruction of crops, and breaches occurred in 1871 and 1890, but without doing much damage. The embankment has gradually been raised, and since the latter year no serious breach has occurred, though the flood of 1893 was the highest recorded.

The Ngawun embankment branches off in a south-westerly direction from the northern end of the Henzada embankment into Bassein District. It was constructed between 1869 and 1884. It is 76 miles long, and, with the Henzada embankment, protects about 1,600 square miles. About 39 miles of embankment and about 500 square miles of protected land are within the limits of Henzada.

Fisheries.

There are 176 fresh-water river and lake fisheries in Henzada District, the leases of which are auctioned annually for a total of rather more than 2 lakhs. None of the individual fisheries is, however, very large. The most valuable realizes between Rs. 12,000 and Rs. 13,000 at the auction sales. A good deal of the fish caught is converted locally into *ngapi*, and the fishing industry is on the whole flourishing.

Forests.

The ten forest Reserves in the District cover an area of 803 square miles, and an additional area of 120 square miles is under settlement. The Reserves are almost entirely in the western part and contain a fair proportion of teak. In the plains the *in* (*Dipterocarpus tuberculatus*) grows freely, and cutch is abundant, mostly in the Myanaung subdivision, while *pyingado* (*Xylia dolabriformis*) is plentiful at the foot of the hills, and is largely used for house-building. A fire-protection scheme was started in 1900, and will probably be extended throughout the Reserves. The forest receipts in 1903-4 were Rs. 64,000.

Minerals.

The District is poor in minerals. An attempt to work the carbonaceous shale in the Okpo township failed in 1882. Petroleum has been discovered at Yenandaung near Myanaung, but the wells have been abandoned.

Arts and manufactures.

Textile industries, largely subsidiary to agriculture, are common throughout the District, but are confined to local requirements. Henzada and Kyangin excel in silk-weaving, and workers in gold, silver, and iron are fairly numerous in

the towns. As in the other delta Districts fish-curing is carried on largely. There are two rice-mills in Henzada town.

Commerce and trade.

Rice is exported in large quantities to Rangoon by rail, river steamers, and country boats for transhipment to foreign ports, and is also sent by river to Upper Burma in steamers. Other exports to Rangoon are betel-leaves, plantains, sugar-cane, and hides. The principal imports are cotton and silk piece-goods, umbrellas, china-ware, and other articles of European manufacture. Till recently they entered the District almost wholly by river; of late, however, the railway has begun to bring them.

Communications.

A steam ferry crosses the Irrawaddy between Henzada and Tharrawaw, a village in Tharrawaddy District on the opposite bank, 103 miles by rail from Rangoon. The railway from Henzada to Bassein (81 miles in length) runs south-westwards through the southern part of the District for a distance of 16 miles, with stations at Henzada, Natmaw, and Neikban. This line was opened in 1903, and a second line from Henzada northwards, through Okpo and Myanaung to Kyangin, is now under construction. Henzada is a station of call for the mail and cargo steamers of the Irrawaddy Flotilla Company plying between Rangoon and Mandalay, and in addition enjoys regular direct communication with Rangoon. In the rains launches run on the Bassein creek to Bassein and intermediate places, and for a few months in the year there is steam traffic between Henzada and Okpo on the Thanbayadaing. The Irrawaddy is navigable throughout the year by large boats and river steamers, which call at all the principal stations along the banks. During the floods caused by the rains the only inter-village communication in the interior of the District is by boat. Roads are used only during the dry season. About 320 miles of road are maintained from Provincial funds, of which 30½ miles are metalled and 289 unmetalled. The District cess fund keeps up seven roads, 38 miles metalled and 30 miles unmetalled. The most important highways are from Henzada to Myanaung (64 miles), and from Henzada to Shage (20 miles). Alongside the embankments run roads from Ngawun to Myenu (25 miles), Ngawun to Nyaunggyaung (52 miles), and Myanaung to Ingauk (39 miles).

District subdivisions and staff.

The District is divided into two subdivisions: Henzada, consisting of the HENZADA, ZALUN, OKPO, and LEMYETHNĀ townships; and Myanaung, consisting of the KANÂUNG and KYANGIN townships. As in other parts of Lower Burma,

the circle *thugyi* is being gradually abolished as deaths or resignations occur, the village headman (*ywathugyi*) taking his place. Village headmen now number 621. The District forms two subdivisions (Henzada and Myanaung) of the Henzada Public Works division. For forest purposes it constitutes part of the Myanaung subdivision of the Henzada-Thongwa Forest division.

Civil justice and crime.

Litigation has largely increased of late years, and the Deputy-Commissioner has recently been relieved of civil work by a District Judge with head-quarters at Bassein, who presides over the Bassein and Henzada District courts. The subdivisional courts are presided over by the subdivisional officers concerned, and the township courts of Henzada and Kanaung by a special township judge who sits at Henzada, while at Okpo and Lemyethnā township judges have relieved the township officers of civil business. Sessions cases are tried by the Judge of the Bassein Division. The magistrates' courts are presided over by the appropriate executive officers in the usual way, but the township magistrates of Henzada, Lemyethnā, and Okpo have the assistance of the township judges in disposing of their criminal work. The crime of the District does not differ from that prevalent throughout the Irrawaddy Division, and, as elsewhere in the delta, criminal work is heavy. Dacoities, at one time very common, have decreased within the last few years; but robberies, thefts, and grievous hurt cases are still numerous.

Revenue administration.

At annexation in 1852 the revenue paid by the District into the coffers of the king of Burma was slightly over 2 lakhs, though much more than this must no doubt have been collected. The chief items were the house-family tax, a tax on land per yoke of oxen, and one on fisheries. Taxes on brokers and transit dues were also imposed, but these were abolished and excise levied in their place after the British occupation.

The greater part of the cultivated lands, from the Irrawaddy to the foot of the Arakan Yoma, was brought under settlement between 1862 and 1868, when rates varying from 12 annas (on the remote interior *kwins*) to Rs. 1-12-0 were levied on each acre of rice land. In 1873-4 a revision of rates took place in the Kyangin township and the northern circles of the Kanaung township, and the rates in this area were raised to R. 1 or Rs. 1-10-0 per acre on rice land, while the rate on gardens, which as a general rule was Rs. 1-12-0, was changed to one varying from Rs. 1-8-0 to Rs. 2. At the

same time an enhancement was effected in the Henzada township, which raised the maximum from Rs. 1-12-0 to Rs. 2. In 1879-80 a general raising of assessment took place all over the Division, ranging from 15 to 25 per cent. The rates prevailing after this enhancement varied from Rs. 1-4-0 to Rs. 2-2-0 on rice land, but the maximum on gardens continued to be Rs. 2. Resettlement operations were undertaken throughout the District in 1883-6, when rates were introduced varying from 12 annas to Rs. 2-8-0 for rice, and from Rs. 2 to Rs. 2-8-0 for gardens. In 1899-1901 the whole cultivated area of the District (except a portion referred to later) was regularly resettled. The new rates varied from 12 annas to Rs. 4 on rice lands, with uniform assessments of Rs. 3 on gardens, Rs. 2 on *mayin* rice, Rs. 2-8-0 on tobacco and miscellaneous cultivation, and Rs. 10 on betel-vines. The interior of the three northern townships at the foot of the Yoma, where cultivation occurs only in patches, was not touched in the settlement operations in 1885-6, and this tract (averaging about 8 miles in width) was resettled in 1900-1. The following rates were then introduced and are still enforced; on *kaukkyi* rice lands, R. 1 to Rs. 3; on *mayin* rice lands, Rs. 2; on gardens, Rs. 2 and Rs. 3; and on miscellaneous cultivation, Rs. 1-8-0 to Rs. 2-8-0.

The steady growth of the revenue in the past may be gathered from the following table, which shows land revenue and total revenue, in thousands of rupees, since 1880-1:—

	1880-1.	1890-1.	1900-1.	1903-4.
Land revenue . .	4,62	6,92	8,45	12,40
Total revenue . .	10,76	13,57	16,24	25,23

The total revenue for 1903-4 includes Rs. 4,49,000 capitation tax, Rs. 2,04,000 from fisheries, and Rs. 3,22,000 excise.

The District cess fund is maintained chiefly by a levy of 10 per cent. on the total land revenue, and is administered by the Deputy-Commissioner for the provision of various local needs. The income in 1903-4 was 1·43 lakhs, and the chief items of expenditure were public works (Rs. 42,000) and education (Rs. 27,000). Local and municipal government.

There are four municipalities, HENZADA, ZALUN, KYANGIN, and MYANAUNG; and one town under a town committee, LEMYETHNĀ.

The District Superintendent of police is aided, by two Assistant Superintendents in charge of the two subdivisions; Police and jails.

and the force includes 4 inspectors, 10 head constables, 33 sergeants, and 301 constables. Fifteen village headmen are on the paid staff of the rural police. The District contains 15 police stations and one outpost. The military police has a strength of 3 native officers and 187 rank and file. Of these 76 are stationed at Henzada, and 39 at Myanaung, the rest being distributed at the different township head-quarters. The District contains two jails, one at Henzada and one at Myanaung. The first has accommodation for 521 prisoners, who work at rice cultivation, brick-making, carpentry, and cane-work. The second is designed to hold 88 prisoners, and its inmates are engaged in gardening and basket-work.

Education. The percentage of literate persons in 1901 was 26 (47·6 males, and 5·4 females). The increase of education in the District since 1880 can be gauged from the number of pupils: 5,446 (1880–1); 6,712 (1890–1); 14,252 (1900–1). In 1903–4 there were 2 special, 18 secondary, 272 primary, and 502 elementary (private) schools, with 12,979 boys and 2,472 girls. The total expenditure on education was Rs. 65,800, which was met from the following sources: municipal funds (Rs. 13,300), District cess (Rs. 27,000), Provincial funds (Rs. 8,600), fees (Rs. 16,300).

Hospitals and dispensaries. There are 5 hospitals and a dispensary, with accommodation for 68 in-patients. In 1903 the number of cases treated was 52,113, including 1,008 in-patients, and 802 operations were performed. The total expenditure was Rs. 19,200, towards which municipal funds contributed Rs. 14,800, Local funds Rs. 3,600, and subscriptions Rs. 800.

Vaccination. Vaccination is compulsory only within municipal limits. In 1903–4 the number of persons successfully vaccinated was 39,772, representing 82 per 1,000 of population.

[J. Mackenna, *Settlement Reports* (1901 and 1902); B. Samuelson, *History of Embankments, Henzada Division* (1889).]

Henzada Subdivision.—Southern portion of Henzada District, Lower Burma, occupying about two-thirds of the whole, and comprising the HENZADA, ZALUN, OKPO, and LEMYETHNĀ townships.

Henzada Township.—Township in Henzada District, Lower Burma, lying between 17° 24′ and 17° 50′ N. and 95° 12′ and 95° 33′ E., with an area of 369 square miles. It lies between the Irrawaddy and the Ngawun, and is a level plain, almost entirely protected by embankments, the Hleseik circle, surrounding the mouth of the latter river, alone being liable to inundation. The population in 1901 was 131,698, compared

with 118,839 in 1891. Except in Henzada town there are very few natives of India. The Karens, in 1901, numbered 16,000, and the majority of the rest of the population is Burman. The density beyond municipal limits is high for Burma, being 291 persons per square mile. The township contains 520 villages and one town, HENZADA (population, 24,756), the township and District head-quarters. The area cultivated in 1903–4 was 221 square miles, paying Rs. 3,80,000 land revenue.

Zalun Township.—Southernmost township of Henzada District, Lower Burma, lying between 17° 20′ and 17° 37′ N. and 95° 25′ and 95° 47′ E., with an area of 276 square miles. It lies across the Irrawaddy, and large areas are liable to annual inundation, especially on the eastern side, which is only partially embanked. The population increased from 58,719 in 1891 to 69,502 in 1901, distributed in one town, ZALUN (population, 6,642), the head-quarters, and 362 villages. There are very few natives of India; Burmans number about 78 per cent. and Karens 21 per cent. of the total. The area cultivated in 1903–4 was 124 square miles, paying Rs. 2,38,000 land revenue.

Okpo.—Township of Henzada District, Lower Burma, lying between 17° 38′ and 18° 2′ N., and 94° 53′ and 95° 31′ E., with an area of 694 square miles. It occupies the centre of the District, extending from the Irrawaddy to the Arakan Yoma. The population increased from 73,686 in 1891 to 84,046 in 1901, though that of the head-quarters, Okpo, fell during the decade from 10,894 to 3,762, and it is no longer administered by a town committee. There are 436 villages. The area cultivated in 1903–4 was 136 square miles, paying Rs. 1,82,000 land revenue.

Lemyethnā Township.—Township of Henzada District, Lower Burma, lying between 17° 24′ and 17° 47′ N. and 94° 54′ and 95° 18′ E., with an area of 438 square miles. The greater part lies between the Ngawun river and the Arakan Yoma, and is quite unprotected from the rise of that river during the rains. The smaller portion, east of the Ngawun, is protected by embankments. The population increased from 57,049 in 1891 to 60,314 in 1901, almost entirely Burmans, Karens numbering only 3,000. There are 354 villages and one town, LEMYETHNĀ (population, 5,813), the head-quarters. The area cultivated in 1903–4 was 89 square miles, paying Rs. 1,33,000 land revenue.

Myanaung Subdivision.—Northern portion of Henzada District, Lower Burma, occupying about one-third of the whole, and comprising the KANAUNG and KYANGIN townships.

Kanaung.—Northern township of Henzada District, Lower Burma, lying between 17° 54′ and 18° 19′ N. and 94° 48′ and 95° 31 E., with an area of 615 square miles. The population increased from 79,499 in 1891 to 92,365 in 1901, the density being 150 persons per square mile. The township extends from the Arakan Yoma in the west to the Irrawaddy, widening as it approaches the river. About one-third is uncultivable, being covered by the spurs of the Yoma. The lands in the western part are protected by embankments and fertile. The population consists almost entirely of Burmans, Karens, and Chins, in the proportions of 92, 6, and 1½ per 100. There are 428 villages and one town, MYANAUNG (population, 6,351). Kanaung (891) is the head-quarters. The area cultivated in 1903–4 was 149 square miles, paying Rs. 2,25,000 land revenue.

Kyangin Township.—Northernmost township of Henzada District, Lower Burma, lying between 18° 7′ and 18° 31′ N. and 94° 54′ and 95° 19′ E., with an area of 478 square miles. The Irrawaddy plain is here narrowed by the approach of the Arakan Yoma, and the western half of the township is jungle-clad and uncultivable. The population increased from 45,828 in 1891 to 46,633 in 1901, and the density (98 persons per square mile) is low compared with the District average of 169. There are very few Karens, the Burmans numbering 95 per cent. and the Chins 4 per cent. of the total. The township contains 243 villages and one town, KYANGIN (population, 7,183), the head-quarters. The area cultivated in 1903–4 was 60 square miles, paying Rs. 82,000 land revenue.

Henzada Town.—Head-quarters of the District of the same name in Lower Burma, situated in 17° 39′ N. and 95° 30′ E., on the western bank of the Irrawaddy, 9 miles below the bifurcation of the Bassein river, and 110 miles by rail from Rangoon. Henzada is said to have been founded early in the sixteenth century, but, although it has been an important town for a long time, its history is uneventful. The population has increased steadily during the last thirty years, the total in 1901 being 24,756, of whom 21,530 were Buddhists, 2,145 Hindus, and 742 Musalmāns. The Hindus have largely increased during the past decade, but the Musalmāns show a falling off. The town is agreeably situated, is well shaded by fine trees, and contains a large courthouse, a jail, an extensive bazar near the steamer *ghāt*, a hospital and other public buildings, all at no great distance from the river bank. Henzada is a trade centre of some importance. Till recently its commerce has been wholly

river-borne, but the new Rangoon-Bassein railway which passes through the town will probably alter the route of a good deal of the trade. It is the terminus of the Western (Henzada-Bassein) section of the railway, and the Henzada station is connected by a steam ferry with Tharrawaw, the terminus of the eastern section on the farther side of the Irrawaddy. Two rice-mills and one saw-mill of recent construction are worked in the town, and milled rice is sent to Upper Burma by boat and to Rangoon by both rail and boat. This is the only export of importance. The town was constituted a municipality in 1874. The municipal income and expenditure during the ten years ending 1901 averaged Rs. 72,000 and Rs. 70,000 respectively. In 1903-4 the totals were 1·2 lakhs and 1·1 lakhs. The principal sources of income in the last-named year were the house tax (Rs. 14,000), market dues (Rs. 46,000), and the conservancy tax (Rs. 8,000); and the principal items of expenditure were conservancy (Rs. 15,500), roads (Rs. 34,000), and hospital (Rs. 11,000). A municipal Anglo-vernacular school contains 180 pupils, and other teaching institutions are managed by missionary bodies and others. The educational expenditure of the municipality in 1903-4 was Rs. 7,000. The municipal hospital has accommodation for 28 in-patients.

Kyangin Town.—Head-quarters of the township of the same name in Henzada District, Lower Burma, situated in 18° 20′ N. and 95° 17′ E., on the west (right) bank of the Irrawaddy in the north of the District. Population (1901), 7,113. It has decreased in the last decade, apparently on account of emigration to the richer delta areas farther south. The town is, however, still fairly prosperous and has a considerable trade in rice. Kyangin was constituted a municipality in 1886. The municipal income and expenditure during the ten years ending 1901 averaged Rs. 12,300 and Rs. 12,500 respectively. In 1903-4 the municipal income was Rs. 17,000, including Rs. 9,500 from dues on markets and slaughter-houses, and Rs. 2,600 from house tax; and the expenditure was Rs. 16,000, of which Rs. 5,300 was spent on conservancy, Rs. 1,500 on roads, and Rs. 900 on the town dispensary. The municipality maintains an Anglo-vernacular school, and contributed Rs. 2,000 towards its up-keep in 1903-4. The dispensary is supported entirely by municipal funds. A railway connecting the town with Henzada has been sanctioned, and is at present in course of construction.

Lemyethnā Town.—Head-quarters of the township of the

same name in Henzada District, Lower Burma, situated in 17° 36′ N. and 95° 11′ E., on the Bassein river, near the south-west corner of the District. Population (1901), 5,813. Its affairs are managed by a town committee. The income and expenditure of the town fund amounted in 1903–4 to Rs. 10,000 and Rs. 11,000 respectively. The civil hospital, supported by local funds, has accommodation for eight in-patients.

Myanaung Town.—Head-quarters of the subdivision of the same name in the Kanaung township of Henzada District, Lower Burma, situated in 18° 17′ N. and 95° 22′ E., on the western bank of the Irrawaddy, about 8 miles south-east of Kyangin and half-way between it and Kanaung. Population (1901), 6,351. Myanaung is said to have been founded by the Talaings about 1250, and was then called Kudut. Alaungpayā captured and renamed it in 1754. It was formerly the head-quarters of the District, which was then called Myanaung. It was constituted a municipality in 1886. During the ten years ending 1901 the municipal income and expenditure averaged Rs. 18,300 and Rs. 18,500 respectively. In 1903–4 the income was Rs. 19,000, including house tax (Rs. 3,000), market dues, &c. (Rs. 12,700); and the expenditure was Rs. 18,000, the chief items being conservancy (Rs. 4,600), hospital (Rs. 3,000), and roads (Rs. 2,600). The municipality supports a hospital and an Anglo-vernacular school, and contributed Rs. 3,000 to education in 1903–4. The Henzada-Kyangin railway, when constructed, will pass through Myanaung.

Zalun Town.—Head-quarters of the township of the same name in Henzada District, Lower Burma, situated in 17° 29′ N. and 95° 34′ E., about 16 miles south-east of Henzada, on the right bank of the Irrawaddy. Population (1901), 6,642. It contains a courthouse, a hospital, quarters for civil and military police, and other buildings, and is administered by a municipal committee which was constituted in 1886. The income and expenditure of the municipal fund during the ten years ending 1901 averaged Rs. 12,700 and Rs. 11,700 respectively. In 1903–4 the income was Rs. 19,000, including Rs. 2,900 from the house tax, and Rs. 8,600 from dues on markets and slaughter-houses; and the expenditure was Rs. 17,000, the chief items being conservancy (Rs. 3,500), roads (Rs. 1,100), hospital (Rs. 1,800), and education (Rs. 900). There is an Anglo-vernacular school belonging to the American Baptist Mission, but no municipal school.

TENASSERIM DIVISION

Tenasserim Division.—The southernmost Division of Lower Burma, lying between 9° 58′ and 19° 29′ N. and 95° 48′ and 99° 40′ E. On the north it is conterminous with Upper Burma, and on the east with Karenni and Siam. On the west it is bounded by the Pegu Division, the Gulf of Martaban, and the Bay of Bengal; and in the south it borders on the Malay Peninsula. While its length from north to south exceeds 500 miles, its width is seldom greater than 100. Towards the south it tapers to Victoria Point, extending along the narrowest part of the Malay Peninsula, in one place at a distance of only 10 miles from the Gulf of Siam. The islands belonging to the Division extend farther south than the mainland, as far as 9° 38′ N. The Division comprises six Districts, four—namely, MERGUI (the southernmost), TAVOY, AMHERST, and THATON—lying along the coast, and SALWEEN and TOUNGOO (the northernmost) in the interior.

The population of the Division, which has its head-quarters at Moulmein, was 576,977 in 1872, 772,620 in 1881, 912,051 in 1891, and 1,159,558 in 1901. Its distribution by Districts in 1901 is shown below:—

District.	Area in square miles.	Population in 1901.	Land revenue in 1903-4, in thousands of rupees.
Toungoo . .	6,172	279,315	6,35
Salween . .	2,666	37,837	24
Thaton . .	5,079	343,510	11,39
Amherst . .	7,062	300,173	6,96
Tavoy . .	5,308	109,979	2,16
Mergui . .	9,789	88,744	1,66
Total	36,076	1,159,558	28,76

The Division contains 4,663 villages and 8 towns, the more important of the latter being MOULMEIN (population, 58,446), TAVOY (22,371), TOUNGOO (15,837), THATON (14,342), and MERGUI (11,987). Of these the first two are trading centres of considerable importance. The predominant race are the Burmans, who numbered 459,637 in 1901, and are distributed

throughout the Division. The Karens (297,084), are also widely diffused, though they are not found as a rule in the tracts near the sea. Talaings (practically confined to Thaton and Amherst) numbered 208,694. Taungthus form a considerable portion of the population of Thaton District, and in the Division as a whole number 41,913. Shans, who inhabit Toungoo District chiefly, were returned in 1901 as numbering 18,591. Siamese live in the border country in the south, and the islands of the Mergui Archipelago are the haunt of the vagrant Salons. Divided according to religion, the population of the Division was composed in 1901 of 993,300 Buddhists, 44,840 Animists (mostly Karens), 37,524 Musalmāns, 45,435 Hindus, and 38,269 Christians (in great part Karen converts). Of the Christians 36,250 were natives. The representatives of other religions were numerically insignificant.

Unlike the Arakan Division, Tenasserim was at no time of its known history a political entity. At the accession of Wariyu, king of Martaban, it was partly Burmese and partly Siamese territory, with the Salween river as boundary. Wariyu, however, extended his sway in the thirteenth century over the greater part of the present Division. Ceaseless struggles ensued in subsequent years between the Talaing and Siamese kingdoms, the latter gaining all but the present Toungoo District in the seventeenth century. The rise of Alaungpayā, however, put an end once and for all to the Siamese power. In 1826 the country south of the Salween was ceded to the British by the Treaty of Yandabo, and the remainder—Toungoo, Salween, and part of Thaton—was occupied after the second Burmese War in 1852.

Boundaries, physical features, and hill and river systems.

Toungoo District.—District in the Tenasserim Division of Lower Burma, lying in the east of the Province, between 17° 33′ and 19° 29′ N. and 95° 48′ and 97° 13′ E., with an area of 6,172 square miles. The northern boundary is marked by a line of masonry pillars running eastwards from the Pegu Yoma, and separating it from Yamethin District and the Southern Shan States. On the east it is divided by ranges of hills from the Southern Shan States, Karenni, and Salween District; on the south by the Kyonpagu stream from Thaton District; and on the west by the Sittang river and the Kun stream from Pegu District, and by the Pegu Yoma from the Districts of Prome, Tharrawaddy, and Thayetmyo.

The District is traversed by three hill ranges, the Pegu Yoma in the west, and the Paunglaung and Nattaung in the east—well-marked chains, all with a general north and south direction,

which send out numerous spurs into the plains. The Yoma on the west rises gradually from the level, reaching an elevation of barely 2,000 feet above the sea at the highest point, whereas in the eastern uplands the ascent is abrupt and the ridges in many places have an altitude of over 5,000 feet. The massing of the hills on the east and west of the Sittang leaves a plain with an average width of about 20 to 30 miles, running north and south through the heart of the District, along which the Rangoon-Mandalay railway has been carried. In the north this level is very rugged and cultivation can be carried on only in patches; in the south it is wider and the soil richer. The southern boundary of the District was extended in 1895 by the inclusion of the Shwegyin subdivision of the old Shwegyin District. This area, though hilly in portions, abounds in lakes and small streams, many of which are leased as fisheries.

The Sittang, a tortuous and oft-changing waterway, passes down the whole length of the District, bisecting it in the north and forming its western boundary in the south. Known first as the Paunglaung, it rises in the hills in the east of Yamethin, and falls into the Gulf of Martaban after draining the entire District. Navigation is rendered difficult by its winding channel and numerous sandbanks; but it is joined by several tributaries rising in the forest-clad hills of the District, and is useful for floating timber and other forest produce, as well as for irrigation. In the Pegu Yoma rise the Swa, a stream about 60 miles in length, which waters the north-west corner of the District; the Kabaung, which joins the Sittang just below Toungoo town; and, a little farther south, the Pyu, a rapid stream whose navigation is very difficult in the rains. From the Paunglaung range on the east flow the Kyaukkyi, running nearly parallel to the Sittang, and joining it a few miles north of Shwegyin; the Shwegyin, joining the main stream at Shwegyin; and the Yaukthawa, which empties itself into the Sittang 6 miles north of Mon. The Thaukyegat rises in the maze of mountains in the extreme north-east of the District, and joins the Sittang about 5 miles south of Toungoo town. Like the Sittang itself, nearly all these feeders are valuable timber channels.

While the central portion of the District is formed of the alluvium of the Sittang, the eastern is made up for the most part of the crystalline gneissic rocks of the Paunglaung range, and the western by the Miocene beds of the Pegu group constituting the Pegu Yoma. Gold occurs in the tributaries of the Shwegyin stream; copper, lead, tin, and coal also exist, but are not worked. Geology.

Botany. The forest vegetation consists chiefly of what are known as upper mixed forests, with teak as the characteristic tree. Other species constituting these forests are mentioned in the PEGU DISTRICT article. East of the Sittang river on the Karen Hills are evergreen and pine forests. The savannah riparian herbaceous vegetation is practically the same as in the PEGU and PROME DISTRICTS[1].

Fauna. At the foot of the hills on either side of the District the elephant, rhinoceros, *tsine* or *hsaing* (*Bos sondaicus*), tiger, leopard, bear, and wild hog are met with; and duck and snipe are plentiful in the lowlands during the cold season.

Climate, temperature, and rainfall. The climate is damp, tending towards dryness in the north. The forest-clad hills on either side and the *tarai* are malarious, but the plains are on the whole fairly healthy. The temperature is recorded only at Toungoo town. There the highest reading registered was 106° in the shade in May, and the lowest 53° in February, the annual mean temperature being about 80°. The small hill station of Thandaung, north-east of the District head-quarters, enjoys a pleasant climate, and is becoming a popular resort for the residents of the plains. Rainfall is registered at Toungoo and Shwegyin. The average at Toungoo for the ten years ending 1904 was 77 inches. During this period the highest amount recorded was 88½ inches, and the lowest 59; the wettest months are July and August, and the driest December, January, and February. At Shwegyin, in the south-east corner of the District, the rainfall is much heavier, and has averaged 134 inches during the last five years.

History and archaeology. The District is associated historically with the Toungoo dynasty, which, during the sixteenth century, was conspicuous in the history of Burma. According to the native chronicle, Asoka had some pagodas built in 321 B.C. in the neighbourhood of the present town of Toungoo, over certain relics of Buddha; and it was in search of these that Narapadisithu, king of Pagan, who figures in Burma, Talaing, and Tavoyan chronicles as a pious and enlightened ruler, sailed up the Sittang in A.D. 1191. Having discovered and renovated the shrines, Narapadisithu left a governor in charge of Toungoo, which seems to show that previous to this the province had been a dependency of Pagan. The over-lord of Pagan, however,

[1] See D. Brandis, *Suggestions regarding Forest Administration in British Burma* (Calcutta, 1881), p. 138; also M. H. Ferrars, *Journal of a Tour into the Karenee Country east of Taungoo* (*Indian Forester*, vol. i, p. 107).

was unable to prevent the invasion of Toungoo in 1286 by Wariyu, king of Martaban, who deposed the governor and deported him. During the collapse of the Pagan kingdom in the latter half of the thirteenth century its rulers interfered but little with the affairs of the province, and opportunity was afforded for the establishment of an independent kingdom. Thawungyi, the first king of Toungoo, was murdered in 1317 after a reign of eighteen years; and his death was the prelude to a period of truly Oriental history, king after king being assassinated by his successor. But, despite intestine unrest, the kingdom increased in power; and in 1417 the king, named Sawlutpinkara, was sufficiently powerful to be considered a suitable ally by the king of Pegu in an attack made by that monarch upon Prome. After Sawlutpinkara's death, however, the rulers of Toungoo kept their thrones only by paying homage to the king of Ava or Pegu; and this state of things lasted till the rise of Mingyinyo, who defeated the Pegu army, and moved the capital to its present site in 1510. Shortly afterwards he utterly defeated an expedition sent by the king of Ava against him, and secured the complete independence of the Toungoo kingdom. Mingyinyo was succeeded by Tabinshweti, who thrice invaded the country of the Talaings and finally secured the throne of Pegu in 1538. This monarch subsequently extended his sway over Prome and Martaban, Toungoo becoming a vassal kingdom once more. In 1596 the reigning king of Toungoo took advantage of the collapse of the Pegu empire to throw off his dependence; but the fall of Pegu was immediately followed by the rise of the Burmese power, and the newly re-established kingdom was destined in 1612 to be brought into subjection by Mahadhammarāza, who had consolidated the kingdom of Ava. From that date Toungoo remained a dependency of the Burmese kingdom, though a fruitless attempt to shake off the Burmese yoke was made during the reign of Naungdawgyi in 1761. The south-eastern portion of the District was the scene of operations in the first Burmese War. Shwegyin was occupied by the British in 1825, but such opposition as was offered to the invaders in this quarter was farther south, beyond the limits of the District. In the second Burmese War Toungoo was entered with little resistance by a column marching from Martaban through Thaton and Shwegyin in 1853, although the District passed with the rest of the province of Pegu under British dominion in 1852. In the early days the present District was included within Toungoo District of the Pegu Division and Shwegyin

District of the Tenasserim Division. In 1870 Toungoo was transferred from Pegu to Tenasserim. There were serious disturbances in Shwegyin in 1885–6, which had their origin in the annexation of Upper Burma, and were not suppressed till military assistance had been invoked. The District, as at present constituted, dates from 1895, when Shwegyin was abolished as a District, and the Shwegyin subdivision was added to the area of Toungoo.

Despite the historical importance of the District, it contains comparatively few archaeological remains. About 6 miles west of Toungoo are the ruins of a former capital, Dwayawadi, founded in 1279; and 24 miles north-west of the District head-quarters, at Swa, are the remains of another ancient town, established in 1194 by Nandathuriya, son-in-law of king Narapadisithu of Pagan. South of Toungoo, and 31 miles from it, is Zeyawadi, founded in 1550 by Bayin-naung, the famous general of Tabinshweti, who afterwards succeeded his royal master under the name of Sinbyumyashin ('the lord of many white elephants'). None of these towns, however, possesses any architectural relics of value.

The people.

The population at the last four enumerations was as follows: (1872) 136,816, (1881) 190,385, (1891) 211,784, and (1901) 279,315. The chief statistics of area and population in 1901 are given in the following table:—

Township.	Area in square miles.	Number of		Population.	Population per square mile.	Percentage of variation in population between 1891 and 1901.	Number of persons able to read and write.
		Towns.	Villages.				
Yedashe . .	925	...	235	42,456	46	+ 34	9,712
Toungoo . .	295	1	227	48,962	166	− 1	13,632
Leiktho . .	1,006	...	181	18,675	19	+ 75	1,828
Pyu* . .	1,589	...	484	85,416	54	+ 89	18,642
Tantabin . .	647	...	159	24,686	38	+ 34	4,350
Kyaukkyi . .	1,217	...	245	32,226	26	+ 25	4,134
Shwegyin . .	493	1	164	26,894	54	− 12	5,629
District total	6,172	2	1,695	279,315	45	+ 32	57,927

* Split up in 1905 into Pyu and Oktwin. For details see PYU.

The only towns are TOUNGOO, the head-quarters, and SHWEGYIN. In the central plain referred to above the population is thick and is yearly becoming denser. In the hills to the east and west, however, the inhabitants are very scattered, the density in the Karen areas being below 19 persons to the

square mile. There is a steady flow of immigration from Upper Burma and the Shan States. In 1901 about 226,700 of the people were Buddhists, 15,700 Animists, and 27,300 Christians, the last being a higher total than in any other District in Burma. Less than 70 per cent. of the inhabitants talk Burmese, and more than 20 per cent. Karen.

Race and occupation.

Of the total population Burmans numbered 180,400 in 1901; Karens (mostly in the Leiktho and Tantabin townships), 66,400; Shans, fairly well distributed over the District, 15,800; Taungthus, so numerous in Thaton and Amherst Districts, only 2,100; Talaings, 600, as compared with 74,600 in the neighbouring District of Thaton; and Chinese, 1,200.

Persons directly dependent on agriculture form 70 per cent. of the total population, compared with 67 per cent. for the whole Province, while 55,801 persons are dependent on *taungya* (shifting) cultivation alone.

Christian missions.

In 1901 native Christians numbered 26,942, most being Karens, who form the majority of the population of the Leiktho township. The Roman Catholics and the Baptists each claim about 10,000 of the Karens of the District, and the Anglicans half that number. Toungoo is one of the most important mission centres in Burma. The Anglican (S.P.G.) mission was founded in 1873, and now possesses 89 churches and 88 schools, with a staff of 3 English and 12 native clergy and 83 catechists. The Roman Catholics have 13 missionaries at work in 149 churches. Leiktho in the north-east of the District is the head-quarters of a Roman Catholic Bishop (the Vicar Apostolic of Eastern Burma). The American Baptist Mission has three agencies at Toungoo among the Karens and Burmese, with 158 churches and 75 schools worked by a staff of 8 missionaries; and an agency at Shwegyin, with 4 missionaries, 62 churches, and 33 schools. Its work in the District dates from 1853. The Methodist mission works at Thandaung.

General agricultural conditions.

The District has developed enormously since the railway to Mandalay was opened. Large areas of waste land have been taken up for cultivation; and the increase in this respect during the last few years has been very rapid, especially in that part of the country which the railway line traverses. The area given up to ordinary plain rice cultivation is a long strip of land running down the centre of the District for about 100 miles, and averaging 15 miles in width from east to west; and it is this stretch of country that the railway serves. An idea of the rapidity of the expansion of cultivation may be gathered from

the fact that the cropped area in one single township (Pyu) is now greater than that of the whole District ten years ago. Almost every class of soil is met with in different parts, varying from the richest alluvial deposits of clay to the almost sterile soil of the old laterite formation. The best classes are found between the Sittang and two of its tributaries, the Kun and the Pyu, where the earth, being chiefly composed of recent alluvial formation, is very fertile, and admirably adapted for rice, the chief staple of the District.

There is nothing particularly noteworthy in the methods of cultivation followed. Rice, the staple crop, is both sown broadcast and transplanted, the former practice being common in the richer river-side land where transplanting is unnecessary. The plough is but little used, and the harrow is the only instrument employed for tilling the ground. A system combining the broadcast and transplanting processes, known as *letkyahnok*, is sometimes followed in places where the soil is poor and the rainfall unreliable. Where it is practised the ordinary nurseries are not used, but about one-half of the fields are thickly sown as soon as the soil has been prepared. By the time the remaining plots have been ploughed, the rice in the first fields is ready to be thinned out and dibbled into them. The process requires great skill and is expensive, but has two advantages: firstly, all the fields have an equal chance of surviving the effects of a season that might have caused the later-planted crop to fail; and, secondly, no land is rendered unproductive for an entire season through being overtaxed by the dense growth of a rice nursery. Manuring the fields with cow-dung (sometimes mixed with paddy husk) is resorted to when the soil is old and poor, but otherwise little is done to enhance the bearing properties of the land.

Agricultural statistics and principal crops.

The following are the main agricultural statistics for 1903-4, in square miles:—

Township.	Total area.	Cultivated.	Forests.
Yedashe	925	64	
Toungoo	295	45	
Leiktho	1,006	2	
Pyu	1,589	250	5,337
Tantabin	647	45	
Kyaukkyi	1,217	55	
Shwegyin	493	23	
Total	6,172	484	5,337

Land tenures are of the usual character. The area of 'grant' land in the District is large. In 1900 the acreage of *patta* holdings still exempt from assessment was far greater in Toungoo than in any other District, and special officers have been deputed to deal with applications for grants. Most of the individual grants are small. The only recent exception is the Zeyawadi grant in the Pyu township, consisting of 1,500 acres, which was made in 1896 to the Mahārānī of DUMRAON (Bengal), revenue-free, to encourage immigration and relieve the stress of population suffering from the famine. Revenue collection is made partly by village headmen and partly by the old circle *thugyis*.

The chief staple produced in the District is rice, of which the *kaukngc* and *kaukkyi* varieties are grown. In 1891-2 the area under rice was only 144 square miles. It has since increased enormously, and in 1903-4 amounted to 440 square miles, of which no less than 244 square miles were comprised in the Pyu township alone. The cultivation of sugar-cane has decreased, but that of tobacco on the alluvial lands in the Shwegyin township has developed largely, reaching a total of 1,500 acres in 1903-4. Sesamum in the latter year covered 2,800 acres (about half of this area being in the Shwegyin township, the rest in the Kyaukkyi and Pyu townships), and peas (*pegyi*) covered 1,600 acres, mostly in the Shwegyin and Yedashe townships. A large area (30 square miles) is under garden cultivation. Betel-nut palms are cultivated on 8,300 acres in Kyaukkyi, Tantabin, and Shwegyin. Plantains, grown chiefly in the Pyu township, cover about 4,000 acres altogether in the District. Coffee was until a few years ago grown with success on the hills in the Leiktho township, but has failed of late owing to leaf disease. An attempt to revive its cultivation is, however, to be made shortly.

Improvements in agricultural practice.

As remarked above, the increase of cultivation has been most marked in the Pyu township on the west of the Sittang. The soil here is rich, and cultivation can be carried out successfully in most seasons. Near Oktwin a variety called *kalā* ('foreign') rice was introduced a few years ago, and is said to grow successfully when the land is water-logged; and recently a similar variety of rice called *yemanaing* ('water-resisting') was experimented with in the same part of the District, and also in the low-lying lands of the Tantabin township. The experiment was successful in the latter place, but the quality of the rice was considered inferior to that of local varieties. Experiments have also been made with Havana

tobacco seed, but the results hitherto have not been altogether satisfactory. Considerable stretches of land in the District are apparently suitable for rhea and rubber. A firm in Rangoon has already taken up a large area for the cultivation of the latter product.

Loans under the Land Improvement and Agriculturists' Loans Act are said to be unpopular, the reason being that most of the new cultivators, who would naturally apply for loans, are strangers from Upper Burma, and have no cattle or any other property to be offered as tangible security, while their co-villagers decline to stand surety for them.

Cattle, &c. Buffaloes are bred to a considerable extent, especially to the east of the Sittang; but bulls, bullocks, and cows are imported from up-country and also from the Shan States. Ponies are annually brought down from the Shan States in batches for sale in the south of the District, the prices varying greatly according to age and height. Goats are fairly common. The pasturage for cattle is ample. Large areas of waste exist on the east of the Sittang, and in the northern part of the District, where cattle can always graze without fear of scarcity for many years to come. In the southern tracts on the west of the Sittang, owing to rapid extension of cultivation, the area available for grazing is somewhat limited, but it is still sufficient for existing requirements. In addition to the formally reserved and waste areas, there are fodder reserves in portions of the District where grazing is allowed to the cattle of certain villages.

Irrigation and fisheries. The artificially irrigated area is small, but here and there irrigation canals have been dug by local labour. There are no figures showing the area actually irrigated. Fisheries are numerous, but for the most part of no very great individual value. They are chiefly situated in or near the Sittang, and produced a revenue of Rs. 49,000 in 1903-4.

Forests. The District comprises two forest divisions, with head-quarters at Toungoo and Shwegyin respectively. In the Toungoo division the forests are of three classes: the upper mixed, the lower mixed, and the *indaing* or laterite forests. The characteristics of the two first are much the same. The principal trees are teak, *pyingado* (*Xylia dolabriformis*), *Lagerstroemia*, *Sterculia*, *Terminalia*, and *Bombax*. In the moister parts, *kanyin* (*Dipterocarpus laevis*), *thingan* (*Hopea odorata*), and *padauk* (*Pterocarpus indicus*) occur in the third class, which prevails chiefly in the laterite regions to the north and east of the Sittang. The principal tree in this class, however, is *in*

(*Dipterocarpus tuberculatus*), varied with *ingyin* (*Pentacme siamensis*), *thitya* (*Shorea obtusa*), and *thitsi* (*Melanorrhoea usitata*). There are 1,337 square miles of 'reserved' forest, and about 4,000 of unclassed. The former lie chiefly on the eastern slopes of the Pegu Yoma, and have been reserved partly because they are the more valuable, and partly because they are more accessible and less devastated by Karen methods of cultivation than the remainder. Unclassed forests are protected by licences for extraction, which are given out each year and limit the area from which timber may be extracted. There are 2,015 acres of teak plantation in the District. *Padauk* is plentiful and used to be exported to the Government Gun-carriage Factory, Madras. The chief minor forest products are bamboos, wild cardamoms, and the *Rhynchodia Wallichii*, a rubber-yielding creeper. This last has not yet been turned to account, but rubber plantations are being tried with every prospect of success. The total forest revenue in 1903–4 was about 9 lakhs.

Minerals.

Gold is washed at and near Shwegyin, which, as its name implies, must formerly have been a gold-producing centre. English experts have examined the ground, but their reports have not been favourable enough to encourage systematic exploitation. Tin is believed to exist in the Karen Hills east of the Sittang, but its occurrence has not been definitely ascertained. Granite, laterite, and limestone are found in the District. The first named is common near Myogyi in the Toungoo township, and is used for road-metal. From thirty to fifty persons are employed in the business of extraction. Laterite is extracted in the Shwegyin township; it is worked by convicts from the Shwegyin jail, and sold to local builders and contractors. Limestone is found in large quantities in parts of the Toungoo township. It is burnt on the spot and disposed of for use in masonry buildings.

Arts and manufactures.

Cotton and silk-weaving are carried on in part of the District, but these industries are declining year by year owing to the importation of foreign piece-goods. A little inlaying is done, and a Toungoo artificer received a gold medal for niello-work at the Delhi Arts Exhibition. Earthen pots are made by hand with the aid of a wheel in a few localities, and mat-plaiting is carried on by Shans in some of the outlying villages of the District.

The Yabeins (see PROME DISTRICT, under Arts and Manufactures) and Karens rear silkworms, and supply the market with raw silk. An attempt has been made to introduce foreign varieties of silkworm, but the growers are conservative and

dislike the trouble that the care of the new kinds entails. The quality of the indigenous silk is not inferior in itself, but it suffers from irregularity of skein, which is due to the careless way in which it is wound, sometimes from five, and sometimes from fifteen cocoons. If the same number were adhered to, the present roughness would be avoided and the quality of the manufactured article would be greatly improved.

There are two rice-mills in the District, one at Toungoo and one at Yedashe, and the out-turn is exported to Upper Burma. Saw-mills (thirteen in all), which have been established in the Toungoo, Yedashe, and Pyu townships, cut up *in* and *pyingado* timber, which is sold in Toungoo and Rangoon. There is a distillery at Toungoo, where liquor, distilled by European methods from jaggery and rice, is sold to the local liquor licensees.

Commerce and trade.

A steady frontier trade is carried on between the District and Karenni and the Southern Shan States, the goods being carried by Shan and Karen bullock caravans over two routes, via Leiktho and via Kyaukkyi. In 1903–4 the imports from the Southern Shan States were valued at $5\frac{1}{2}$ lakhs (cattle, Rs. 4,25,000; ponies and mules, Rs. 86,000), and those from Karenni at Rs. 13,000 (consisting only of silver and other metal-work). The exports to the Southern Shan States were valued in the same year at only $1\frac{3}{4}$ lakhs, $1\frac{1}{3}$ lakhs being silver treasure, and the other items betel-nut (Rs. 8,500), dried fish (Rs. 8,000), raw silk, jaggery, *thitsi* varnish, and timber from Toungoo, and re-exported piece-goods and cotton yarn.

Communications.

The Rangoon-Mandalay railway runs through the District, from mile 120 to mile 215, with fourteen stations, including Toungoo and the township head-quarters of Yedashe and Pyu. The railway provides an express service twice daily to Mandalay and Rangoon, in addition to local trains.

Outside municipal limits only 13 miles of metalled roads are maintained, consisting for the most part of short metalled stretches on the longer unmetalled roads. In all 153 miles of unmetalled road are kept up from Provincial and 138 from Local funds. The former include 44 miles of the old Toungoo frontier road, 24 miles of the Thandaung road, 44 miles of the Toungoo-Pegu road, the Nancho road (22 miles), and 12 miles of the Thayetmyo road. Among the Local fund highways are a road from Shwegyin to Kyaukkyi, a road from Shwegyin to the hills, and a road from Taye to Bonmadi. There are fifteen ferries on the Sittang, and a private launch runs on that river between Shwegyin and Pazunmyaung, above which point steam navigation is not safe.

District subdivisions and staff.

The District is divided into three subdivisions: Toungoo, containing the YEDASHE, TOUNGOO, and LEIKTHO townships; Pyu, containing the PYU, OKTWIN, and TANTABIN townships; and Shwegyin, containing the KYAUKKYI and SHWEGYIN townships. The townships are under the usual executive officers, subordinate to whom are 706 *ywathugyis* (village headmen). The head-quarters staff includes, besides the Deputy-Commissioner and other District officers, the adjutant of the Toungoo military police battalion, and a special recruiting officer for the Karen military police. Toungoo is the head-quarters of the Superintending Engineer in charge of the Toungoo Public Works circle, and the District forms a division of that circle, with two subdivisions. There are three Deputy-Conservators of Forests, one each in charge of the Toungoo and Shwegyin Forest divisions, and one on working-plans duty at Shwegyin.

Civil justice and crime.

Toungoo forms, with Pegu, the charge of a District Judge who has his head-quarters at Pegu. The subdivisional officers and four of the township officers are judges of their respective courts; but there are also two whole-time civil township judges, one for the Pyu and Oktwin townships, the other for the townships of Toungoo and Yedashe. The District forms part of the Tenasserim civil and sessions divisions, the head-quarters of which are at Moulmein.

Criminal work is on the increase. There is a good deal of violent crime, and dacoity is of not infrequent occurrence in the dry season. Opium is still smuggled from the Shan States, and *gānja* grows wild on the Pegu Yoma and is brought down by agents who sell it illicitly to native customers on the railway line.

Revenue administration.

Land revenue has increased owing to the rush for cultivable land, which is due partly to the natural growth of the population, but more still to immigration. The same causes account for increases under the head of capitation tax and fishery revenue. Income tax has been swelled by the growth of small towns along the line of the railway and by the same general advance in prosperity, which is further evidenced by the saw and rice-mills that have been started in the last few years. Land assessment in lieu of capitation tax is on the decrease.

Before the annexation of Pegu the revenue consisted chiefly of the house or family tax, assessed on Burmans and Karens alike, with small imposts levied on fisheries and betel and palm plantations, and a land tax per yoke of oxen. Local officials received all fines and fees in judicial proceedings. After annexation, the revenue reached nearly a lakh in 1855-6, about

a quarter of this being land tax, a quarter capitation tax, and a quarter fisheries, customs, and excise.

Land revenue was first collected at the original rates, which were revised five years later, and again in 1880–1. From that date until regular settlement operations were introduced into the District in 1898–1900 the rates in force varied for rice land from 6 annas to Rs. 1–12–0 per acre; for garden land from Rs. 1–8–0 to Rs. 2–8–0; and for miscellaneous cultivation stood at Rs. 1–8–0 all round. In 1898–9 the richest portion of the southern half of the District was settled, and the following revised rates were introduced in the Pyu township and the Shwegyin subdivision: for rice land, R. 1 to Rs. 3–4–0; for garden land, Rs. 2 to Rs. 6; for miscellaneous cultivation, Rs. 3; and for sugar-cane cultivation, Rs. 4 to Rs. 6 per acre. In 1899–1900 the operations were extended to a considerable portion of the rest of the District, including parts of the Toungoo subdivision and the Tantabin township of the Pyu subdivision. The rates sanctioned at this settlement were: for rice land, from 8 annas to Rs. 2–2–0 (to be raised to Rs. 2–14–0 after five years); for gardens, Rs. 2–8–0; for miscellaneous cultivation, Rs. 3; and for *taungya* cultivation, Rs. 1–8–0 per acre. Both the settlements were for fifteen years. The average assessment per acre of all kinds of land amounts to a fraction under Rs. 2. The average area of a holding varies from $2\frac{1}{3}$ to 16 acres for rice land; for gardens from $\frac{1}{2}$ to $3\frac{1}{2}$ acres; for miscellaneous cultivation from $\frac{1}{4}$ to 11 acres; and for sugar-cane from $\frac{1}{2}$ to 30 acres.

Owing to modifications of the District boundaries, trustworthy comparative statistics of revenue for past years are not obtainable. The land revenue in 1900–1 was 4·5 lakhs and in 1903–4 6·4 lakhs. The total revenue collected in 1900–1 was 7 lakhs, and in 1903–4 exceeded 10 lakhs.

Local and municipal government.

The District cess fund, administered by the Deputy-Commissioner for the up-keep of roads and various local needs, had an income in 1903–4 of 1·2 lakhs, nearly one-third of which was devoted to public works.

There are two municipalities, TOUNGOO and SHWEGYIN, and the forming of a town committee for Pyu, the head-quarters of the Pyu township, is under consideration.

Police and jails.

The police force consists of a District Superintendent, an Assistant Superintendent, 4 inspectors, 10 head constables, 38 sergeants, and 311 constables. The Toungoo and Leiktho subdivisions are ordinarily in charge of Assistant Superintendents, the men being distributed in fifteen police stations and

outposts. Toungoo is the head-quarters of the Toungoo battalion of military police; and 150 men of this force are stationed in the District—45 at Toungoo, 30 at Shwegyin, and 15 each at the outlying township head-quarters. Their chief duties consist in escorting prisoners and treasure, and in guarding lock-ups. The jail at Toungoo has accommodation for 674 prisoners.

Education. Instruction is chiefly in the hands of religious teachers, Christian and Buddhist. In spite, however, of the fact that the missionaries have done so much in the cause of education, the standard of literacy in Toungoo is low, the proportion of persons able to read and write being only 20·7 per cent. (35·6 males and 5 females) of the population in 1901. This is probably due to the preponderance of the Karen element. The number of pupils on the rolls was 11,389 in 1901 and 9,952 in 1904 (including 1,767 girls). In 1903–4 there were 2 special, 16 secondary, 192 primary, and 269 elementary (private) schools. Of the vernacular schools about two-thirds are Burman and one-third Karen. The total expenditure on education in 1903–4 was Rs. 65,300, derived from the following sources: Provincial (Rs. 15,900), municipal (Rs. 14,100), District cess fund (Rs. 11,100), subscriptions (Rs. 19,700), fees (Rs. 4,500).

Hospitals. There are two hospitals with accommodation for 95 inmates, and 20,320 patients were treated in 1903, of whom 962 were in-patients, and 403 operations were performed. The total income was Rs. 12,900, municipal funds contributing Rs. 9,000, Provincial funds Rs. 1,100, and the District cess fund Rs. 1,500.

Vaccination. Vaccination is compulsory only in the two municipal areas. It does not, unfortunately, gain in popularity, and it is said that inoculation is still practised throughout the District. In 1903–4 the number of persons successfully vaccinated was 8,733, representing 31 per 1,000 of population.

[Captain H. Des Voeux, *Settlement Report* (1900); W. V. Wallace, *Settlement Report* (1901).]

Toungoo Subdivision.—Subdivision of Toungoo District, Lower Burma, containing the YEDASHE, TOUNGOO, and LEIKTHO townships, with head-quarters at Toungoo town.

Yedashe.—North-western township of Toungoo District, Lower Burma, lying between 19° 6′ and 19° 28′ N. and 95° 48′ and 96° 28′ E., with an area of 925 square miles. The greater part of the township lies west of the Sittang, and extends to the Pegu Yoma; and only the plain of the Sittang, about 12 miles in width, is extensively cultivated, the rest of

the township being hilly. The population was 31,715 in 1891 and 42,456 in 1901, distributed in 235 villages. The head-quarters are at Yedashe (population, 2,599), on the railway north of Toungoo. The area cultivated in 1903–4 was 64 square miles, paying Rs. 71,000 land revenue.

Toungoo Township.—Head-quarters township of Toungoo District, Lower Burma, lying between 18° 52′ and 19° 11′ N. and 96° 1′ and 96° 37′ E., with an area of 295 square miles. It is comparatively small, forming a wedge driven in between the large townships of Yedashe and Pyu, with its base lying along the eastern boundary of the Sittang plain, and its point in the Pegu Yoma. The population was 49,490 in 1891, and 48,962 in 1901 (including 3,604 Shans and 1,077 Karens), distributed in one town, TOUNGOO (population, 15,837), the head-quarters of the township and District, and 227 villages. The area cultivated in 1903–4 was 45 square miles, paying Rs. 53,000 land revenue.

Leiktho.—Karen township of Toungoo District, Lower Burma, lying between 18° 53′ and 19° 29′ N. and 96° 22′ and 97° 2′ E., with an area of 1,006 square miles. It is mountainous throughout, and well watered, the greater part of the cultivation being *taungya* (shifting). The population was 10,616 in 1891, and 18,675 in 1901 (mostly Karen Christians), distributed in 181 villages, Leiktho (population, 275) being the head-quarters. Only 1,100 acres were cultivated (apart from *taungyas*) in 1903–4, and the land revenue was Rs. 1,000.

Pyu Subdivision.—Subdivision of the Toungoo District, Lower Burma, containing the PYU, OKTWIN, and TANTABIN townships, with head-quarters at Pyu.

Pyu Township.—South-western township of Toungoo District, Lower Burma, lying between 18° 15′ and 19° 9′ N. and 95° 48′ and 96° 41′ E., with an area of 1,589 square miles. It is a very large township, extending from the Sittang to the Pegu Yoma, and has developed at an extraordinary rate, the cropped area having increased threefold in ten years. The cultivated plain extends for from 1 to 15 miles west of the Sittang, and the railway to Rangoon runs through the middle of it, affording easy access to the markets. The population was 45,201 in 1891, and 85,416 in 1901 (including 6,987 Karens and 3,697 Shans), distributed in 484 villages, the head-quarters being at Pyu (population, 1,127), on the railway. The area cultivated in 1903–4 was 250 square miles, paying Rs. 3,78,000 land revenue. Owing to its unwieldy size, the township was split up in 1905 into Pyu and OKTWIN. The reduced

charge has an area of 943 square miles and a population (1901) of 74,607.

Oktwin.—Township in Toungoo District, Lower Burma, constituted in 1905 from a portion of the Pyu township, with an area of 646 square miles and a population (1901) of 10,809.

Tantabin.—Karen township of Toungoo District, Lower Burma, lying between 18° 35′ and 19° 4′ N. and 96° 27′ and 97° 9′ E., with an area of 647 square miles. It extends from the Sittang to the mountain barrier bounding Karenni; and all but the plain of the Sittang in the west, some 10 miles broad, is hilly and populated by Karens. The rice lands in the plain are cultivated by the Burmans, while the Karens practise *taungya* or shifting cultivation on the highlands. The population was 18,478 in 1891, and 24,686 in 1901, equally divided into Karens (three-fourths of whom are Christians) and Burmans. The number of villages is 159, Tantabin (population, 994) being the head-quarters. The area cultivated in 1903–4 was 45 square miles, paying Rs. 48,000 land revenue.

Shwegyin Subdivision.—Subdivision of Toungoo District, Lower Burma, containing the Kyaukkyi and Shwegyin townships.

Kyaukkyi.—Southern township of Toungoo District, Lower Burma, lying between 18° 0′ and 18° 45′ N. and 96° 26′ and 97° 12′ E., with an area of 1,217 square miles. It is a large township, extending from the Sittang in the west to the border of Salween District in the east. Along the Sittang is a cultivated plain, averaging about 10 miles in width. East of this is hilly country inhabited by *taungya*-cutting Karens. The population was 25,656 in 1891, and 32,226 in 1901 (Burmans, 13,456; Karens, 17,672), distributed in 245 villages, the head-quarters being at Kyaukkyi (population, 1,650). The area cultivated in 1903–4 was 55 square miles, paying Rs. 62,000 land revenue.

Shwegyin Township.—Southernmost township of Toungoo District, Lower Burma, lying between 17° 33′ and 18° 13′ N. and 96° 48′ and 97° 13′ E., with an area of 493 square miles. It extends from the Sittang, which separates it from Pegu District, to the borders of Salween District. The population was 30,628 in 1891, and 26,894 in 1901 (nearly all Burmans or Talaings), residing in one town, Shwegyin (population, 7,616), the head-quarters, and 164 villages. The area cultivated in 1903–4 was 23 square miles, paying Rs. 22,000 land revenue.

Shwegyin Town.—Head-quarters of the subdivision of the same name in Toungoo District, Lower Burma, and formerly

head-quarters of a District called after it. It is picturesquely situated in 17° 55′ N. and 96° 53′ E., close to the western slopes of the Paunglaung Hills, on the left bank of the Sittang river, immediately to the north of the point where the Shwegyin stream enters it from the east. It is well laid out, but is low-lying and apt to be flooded during the rains. Shwegyin means in Burmese 'gold-washing,' and it is probable that gold was found in the neighbourhood at one time. The place has, however, no history, having grown from a small village in comparatively recent times. Neither in the first nor the second Burmese War was any resistance offered to the British, who on both occasions occupied the town. Population (1901), 7,616. Shwegyin ceased to be a District head-quarters in 1895, and this accounts for part of the decrease during the last decade. The falling off had, however, begun earlier, and was largely caused by the remoteness of the town and its inaccessibility from the railway.

The town was constituted a municipality in 1888, the present committee consisting of 3 *ex officio* and 8 nominated members. The municipal income and expenditure during the ten years ending 1901 averaged Rs. 20,000. In 1903–4 the income was Rs. 22,000, Rs. 11,000 being derived from markets, and Rs. 3,300 from house and land tax; and the expenditure was Rs. 19,000, including Rs. 3,200 spent on conservancy and Rs. 3,500 on education. The municipal school contains 95 pupils, and an American Baptist Karen school 138. The municipal hospital has accommodation for 27 in-patients.

Thandaung.—Hill station in the Toungoo township of Toungoo District, Lower Burma, situated in 19° 3′ N. and 96° 36′ E., 22 miles east-north-east of Toungoo, with which it is connected by road. It lies on a ridge surrounded by picturesque scenery, at a height of 4,200 feet above the sea, and contains a large *dāk*-bungalow, an hotel, and a steadily increasing number of private residences. In 1901 its inhabitants numbered less than 50, but the total has risen since then. No records of temperature are kept in the station, but the thermometer rises little above 70° in the hot season. The rainfall is very heavy during the monsoon. Steps are being taken to improve the means of communication between Toungoo and Thandaung, and there is every prospect of its proving a useful sanitarium for the residents of Lower Burma.

Toungoo Town.—Head-quarters of the District of the same name in Lower Burma, situated in 18° 55′ N. and 96° 28′ E., on the Rangoon-Mandalay railway, 166 miles from

Rangoon and 220 miles from Mandalay, close to the right bank of the Sittang river, which separates it from the western spurs of the Karen Hills. The town, which is well wooded and picturesque, is regularly laid out, and contains a good bazar, courthouses, jail, hospital, and Roman Catholic, Anglican, and Baptist churches and schools for Karens and Burmans. Near the railway station and close to the railway line is a solidly built square brick fort, a relic of the days when Toungoo was an important post on the frontier of Lower Burma. Up to 1893 Toungoo was a cantonment of some importance, but as the country quieted down the troops were withdrawn, and it has ceased to be a military station. On the west, inside the old wall, is a sheet of water about $1\frac{1}{2}$ miles in length and half a mile in breadth; and surrounding the town is the old fosse, 170 feet wide, full of water in the rains. The site of the town is slightly higher than the surrounding country, which is open and partially cultivated, and during the rainy season becomes an extensive marsh. The Sittang is of no great width at Toungoo. It is not, however, bridged, though the construction of a bridge is in contemplation.

Toungoo is a corruption of the Burmese *taung-ngu* or 'hill spur.' The history of the town is bound up with that of the kingdom of Toungoo, at one time independent but afterwards a mere dependency of Pegu. In 1510 Mingyinyo moved his capital to where Toungoo now stands from a site some 6 miles distant to the south-west. Of the pagodas marking the original city only brick ruins remain. During the second Burmese War the town was occupied without opposition by a column from Martaban in 1853.

The population of Toungoo at the last four enumerations was as follows: (1872) 10,732, (1881) 17,199, (1891) 19,232, and (1901) 15,837. The decrease between 1891 and 1901 is due, to a large extent, to the abolition of the cantonment. Of the total in 1901, Musalmāns numbered 2,098, Hindus 1,635, and Christians 626. The Karen-speaking population is only 207.

The town is not noted for any particular industry. Cotton and silk-weaving are carried on as domestic industries, and metal-work of all kinds is done. There are two saw-mills, a rice-mill, a distillery, and a tannery. The town is an important railway centre.

In addition to the usual officials there is a Superintending Engineer in charge of the Toungoo circle. Toungoo was constituted a municipality in 1874. During the ten years ending 1901 the municipal receipts and expenditure averaged

between Rs. 75,000 and Rs. 76,000. In 1903–4 the income amounted to Rs. 84,000, the chief items being Rs. 41,600 from markets, Rs. 10,600 from the house and land tax, and Rs. 7,600 from the lighting tax. The expenditure in the same year was Rs. 99,000, including conservancy (Rs. 24,500), hospitals (Rs. 10,000), and roads (Rs. 11,000). A scavenging tax has been imposed recently.

Toungoo is well provided with educational institutions. The American Baptist Mission maintains two Karen and one Burmese school, and the Roman Catholics and Anglicans maintain schools for both boys and girls. In addition to the missionary seminaries, the town contains a vernacular middle school, and the municipality contributes liberally towards education. The town hospital is situated on rising ground near the railway, with accommodation for 68 in-patients.

Boundaries, configuration, and hill and river systems.

Salween District (Burmese, *Than-lwin*).—A hill District in the extreme north of the Tenasserim Division of Lower Burma, lying between 17° 17′ and 18° 41′ N. and 96° 58′ and 97° 46′ E., with an area of 2,666 square miles. It includes the whole of the country between the Salween on the east and the Paunglaung range (the watershed between the Sittang and the Yunzalin and Bilin) on the west. To the north of the District lies Karenni; to the west Toungoo District; to the south and south-east Thaton District; and to the east, on the farther side of the Salween, the province of Chiengmai in Northern Siam. Salween is about 120 miles long by 40 to 50 miles broad in a direct line. Its distinctive features are the long narrow valleys into which it is divided by ranges of hills, having a general direction of north-north-west and south-south-east, with peaks rising to 3,000 and 5,000 feet. The whole country is, in point of fact, a wilderness of mountains, and the valleys may more properly be described as long winding gorges, in which the view is naturally very limited. The scenery in the Yunzalin valley is extremely picturesque; but, owing to the nature of the country, it is confined to short stretches of river and hill, a picture that is repeated with monotonous iteration throughout the greater part of the valley. The pine forests that clothe the hills farther north, however, afford some variation to the otherwise tedious beauty of the scenery in general.

The country is drained by three main rivers: the Salween, which gives the District its name, to the east; the Yunzalin, one of the Salween's affluents, in the centre; and the Bilin to the west—all fed by innumerable mountain torrents and partaking somewhat of the nature of their turbulent tributaries.

They all flow in a south-south-easterly direction. The Yunzalin, which divides the District into two halves east and west, is navigable by country boats as far as Papun, the head-quarters of the District; the Bilin as far as Pawota, near the south-west corner of the District; the Salween, which forms the eastern border, can be navigated, notwithstanding many rapids, by native craft throughout as much of its course as lies within the District except at the Hatgyi (the Great Rapids), a series of formidable falls which bar the passage a little below the place where the Thaungyin, the north-eastern boundary of Thaton District, flows into it from the east. The Bilin is not an affluent of the Salween, but enters the sea in Thaton District.

Geology. Salween is essentially a hill tract, and is traversed in a general north and south direction by ranges of hills. The country is composed of several groups of beds of Palaeozoic age, together with metamorphic rocks, the whole traversed by granite and elvan dikes in which gneiss, limestone, and hard calcareous sandstone are associated. The last two are probably of the Moulmein group and of Carboniferous age.

Botany. A dense mass of tropical forest trees covers the lower or southern portions of the narrow river basins, becoming interspersed higher up the valleys and on the hill-slopes with mixed forest trees, including teak, *padauk* (*Pterocarpus indicus*), *pyingado* (*Xylia dolabriformis*), and *Albizzia Lebbek*, with species of oak, fig, bamboo, &c. Orchids and ferns abound on the trees and rocks. In the northern part of the District large forests of pine occur at an elevation of 2,000 feet and upwards. The species met with are *Pinus Khasya* and *Pinus Merkusii*.

Fauna. The District abounds in wild animals, principally deer and wild hog. Tigers and leopards are numerous, and bears are also frequently met with, but large game of other kind is not common.

Climate and temperature. The climate in the valleys, generally speaking, is moist, hot, and unhealthy, and has a peculiarly enervating effect on persons not acclimatized to it. In the upper part of the Yunzalin valley, however, at an elevation of 2,000 feet and upwards, in the pine-forest tract, pleasanter and healthier conditions prevail, though even there the climate leaves much to be desired. In the north the thermometer falls to freezing-point at night in the month of January. At Papun the temperature in the cold season ranges between 65° and 80°; in the hot season, between 75° and 97°.

Rainfall. The rainfall, which averages 114 inches annually, is evenly

distributed throughout the District. There is practically no rain during the first four or the last two months of the year.

History. Very little is known of the early history of Salween. Tradition asserts that the eastern portion of the country was formerly inhabited by Yun (Lao) Shans, who have given their name to the Yunzalin river. Most of these are said to have been brought away by Alaungpayā on his return from the invasion of Siam, and to have settled in the neighbourhood of Syriam. The Karens appear to have afterwards occupied and obtained possession of the country, but were some time later subjugated by the chief of Chiengmai, a state at that time independent of Siam. The remains of extensive fortifications, said to have been constructed by the Shans, and probably of this period, are still to be seen in the District. After the second Burmese War the country became British territory and was included in the old Shwegyin District, but remained for some years in a very disturbed state. A Karen, who called himself a *Minlaung* ('the incarnation of a prince'), collected around him a number of adventurers from the neighbouring Shan and Karen areas, and reduced the tract to complete subjection. This outlaw and his followers, however, did not remain long in the country. They were driven out by a mixed British force of soldiers and police, aided by friendly Karens, and were obliged to take refuge in Chiengmai. Disturbances recommenced in 1867; a chief named Di Pa attacked and plundered several villages, and threatened Papun, and dacoities continued for some time. For the better administration of the tract it was accordingly separated from Shwegyin in 1872, and placed in charge of an officer immediately under the Commissioner of Tenasserim; and from this date the area ceased to be styled the Yunzalin (Rwon za-leng) subdivision of Shwegyin District, and became the Salween District, with Papun as its head-quarters.

The people. The population in 1901 was 37,837, distributed in 246 villages, the head-quarters being at PAPUN. Its numbers have been increasing steadily during the past thirty years. The total was 26,117 in 1872; 30,009 in 1881; and 31,439 in 1891. The District forms a single township called PAPUN. Of the total population 23,500 (or 62 per cent.) are Animists and 13,800 (or nearly 37 per cent.) Buddhists. The majority of the Karen population are animistic in their belief, but the number professing Buddhism is increasing yearly. Karen is the prevailing language.

Race and The Karens form the most important racial element, and

number 33,400. The Shans come next with 2,816, while the Burmese total is only 953. The other races are for the most part Taungthus and Talaings. There are a few natives of India. About 86 per cent. of the total population were engaged in or dependent upon agriculture in 1901. Of this number nearly seven-eighths were supported by *taungya* cultivation alone. Occupation.

In 1901 native Christians numbered 174, of whom 133 were Baptists, chiefly converted Karens. These latter possess a chapel at Papun, and support a native pastor. Christian missions.

The soil is uniformly poor, except here and there in the Bilin and Yunzalin valleys, where loamy alluvial deposits have been formed. The rainfall is always ample and seasonable, but the extremely hilly nature of the country and its poor soil afford little scope for agricultural development. Owing to the conformation of the surface, *taungya* cultivation naturally takes the first place. *Le* or 'wet' rice cultivation is carried on in the small area of low-lying plain land in the valleys. It is mostly in the form of terraced fields, flooded by means of drains, connected with hill streams or torrents, which, dependent on the rainfall, can supply the necessary water for this kind of cultivation only during the monsoon period. Areca palms are grown in sheltered spots between the lesser hill spurs. General agricultural conditions.

In 1903–4 only 36 square miles were cultivated. Rice is the staple grain, occcupying 31 square miles of the total. Other food-crops are raised in such small quantities as scarcely to deserve mention. A moderate quantity of sesamum is grown on old *taungyas*, but details of the area under this crop are not available. The greater part of the oilseed is exported in bulk, though some of it passes through the local oil-mills (*si-zon*). Betel-nuts are also produced for export in fairly large quantities, on an area of 3,000 acres in 1903–4. Nothing else is grown, save a little tobacco and sugar-cane for local consumption. Chief agricultural statistics and principal crops.

Cultivation has steadily increased year by year, but it cannot be expected in a rugged country like Salween to attain anything like the important position it holds in other Districts. The increase in the production of rice is chiefly due to the demands of an increasing population. Improvement in quality by selection of seed is not understood by the cultivators. No loans for land improvement have been applied for or made, but advances to agriculturists for the extension of cultivation have from time to time been granted. Droughts, floods, and insect plagues have never been experienced in the District; but cattle-disease occurs yearly, though not to any serious extent. Improvements in agricultural practice.

There is no cattle or pony breeding; and although elephants, Cattle, &c.

buffaloes, and bullocks are largely used, they are all imported from elsewhere, chiefly from Northern Siam. All overland transport is carried on by means of elephants and pack-bullocks. Ponies and mules are scarce and rarely used.

Forests. The forests are of three classes. In the lowlands the ground is covered with tropical forests, while higher up the valleys and on the hills the slopes are clad with mixed and pine forests. The timber contained in them includes teak, *pyingado* (*Xylia dolabriformis*), *pyinma* (*Lagerstroemia Flos Reginae*), *padauk* (*Pterocarpus indicus*), *thingan* (*Hopea odorata*), and a number of other trees. Bamboos are plentiful, and various kinds of cane are found. 'Reserved' forests cover 128 square miles, of which the greater part is under measures of protection from fire. No forests have been notified as protected, but the unclassed forests amount to approximately 2,000 square miles. Teak plantations in an area of $11\frac{3}{4}$ acres were started in the year 1876, and in a few of these *padauk* has been mixed with young teak with fair success. The receipts from forests in 1903-4 amounted to 1·6 lakhs. All the timber extracted from the District is floated down the Salween river to Moulmein.

Minerals. Lead and iron ore have been discovered in various places, but much of the former could not be profitably extracted unless a great demand for the metal were to arise in the immediate neighbourhood of the workings. Veins of lead have also been found in more accessible parts of the District. The ore is said to contain about 14 oz. of silver to a ton of metallic lead. An attempt was once made to exploit a vein discovered a short distance up the Kanyindon, a tributary of the Yunzalin; but though much valuable machinery was imported, the work was abandoned very soon after operations had commenced. The iron ore occurring in the District is of little or no value. Gold-dust is found in the Mewaing creek, a tributary of the Bilin, flowing into it from the west. The inhabitants of the Shan village of Mewaing, who are mostly petty shopkeepers, wash for gold in the dry season, when the auriferous mudbanks are exposed. The gold occurs in diminutive scales, and the result of a season's washing is said to be from one to two ounces of gold-dust for each worker.

Arts and manufactures. Manufactures are almost non-existent. Cotton-weaving by hand is carried on as a source of income on a small scale, for the most part by Shan and Talaing women. The industry is universal among the Karens, whose women supply the greater part of the requirements of their household in the way of clothing, but they do not manufacture for sale. Mats are

woven by both men and women for domestic use. Oil is expressed from sesamum seed in a few oil-mills, the produce being disposed of in the local market. The Karens are permitted to manufacture liquor in small quantities for their own consumption. There are four licensed distilleries for the manufacture of country spirit for sale.

Commerce and trade.

In addition to traffic with other portions of Burma, there is a steady trade with Karenni and Siam, over three main routes: the Dagwin route, leading due east from Papun across the Salween river into Siam; the Kyaukhnyat route, somewhat more to the north; and the Kawludo route, farther north again. Both the latter routes communicate with Karenni as well as with Siam. The chief imports are cattle and treasure. Clothing, jewellery, tea, &c., are also brought in, but in small quantities. About 80 per cent. of the imports come from Siam. The chief exports are silk and cotton piece-goods, wearing apparel, jewellery, betel-nuts, manufactured iron, petroleum, salt, and provisions, as well as silver (rupees) and gold (Chinese). Siam receives 60 per cent. of what is sent out, and Karenni the rest.

Ninety per cent. of the imports from Siam and 80 per cent. of the exports to that country are carried over the Dagwin route, while the remainder go through Kyaukhnyat. The roads on both these routes are rough paths crossing extremely hilly country, and as a rule elephants and bullocks only are employed as transport. An improved bridle-path between Papun and Dagwin is, however, under construction.

The exports and imports to Karenni are divided between the land and river routes. The former passes close to Kawludo, a police post in the north of the District; the latter commences at Kyaukhnyat, at which place goods for Karenni, carried from Papun on elephants or bullocks, are transhipped into boats which proceed up the Salween river to their destination. With the exception of betel-nuts, nearly all goods for export are brought to Papun by boat from Moulmein. There are trade registration stations at Dagwin, Kyaukhnyat, and Kawludo. The total value of the merchandise imported from Siam and Karenni in 1903–4 was 46½ lakhs, and the total value of that exported 2½ lakhs.

Communications.

The chief lines of road connect Papun, the head-quarters of the District, with Bilin in Thaton District (71 miles), Kamamaung on the Salween (53 miles), Dagwin on the Salween (28 miles), Kyaukhnyat, Kawludo, Lomati, and Mewaing within the limits of the District, and Shwegyin (in Toungoo

District). All these roads were mere jungle tracks till very recently, but are now being improved. The Papun-Bilin road is to be a cart-road, the others will be bridle-paths.

The waterways are the Salween, the Yunzalin, and the Bilin rivers. On the first, intercourse between Kyaukhnyat and the Karenni country on the north is maintained by means of country boats. The Yunzalin is the chief means of communication between Papun and Moulmein, and nine-tenths of the goods brought to Papun for local consumption or for export are carried by boat. The weekly mails are also conveyed by the same means. The Yunzalin is not at present navigable by launches, but might without great difficulty be made so during four to six months in the year. The Bilin river is an important waterway, and is the channel for most of the import and export trade of the western areas of the District. There are ferries across the Salween at Dagwin and Kyaukhnyat, and others on the Yunzalin and Bilin rivers.

District staff.

The District Superintendent of police is also the Deputy-Commissioner, and carries on the administration of the District with the assistance of a township officer. There are six *thugyis* of circles. Sections 2 to 13 of the Lower Burma Village Act have not been extended to Salween; and consequently the village headmen, who are here called *kyedangyis*, exercise no magisterial powers and have very little authority in the villages under them. The District forms a subdivision of the Martaban Public Works division, and is included in the West Salween Forest division, which also comprises a portion of Thaton District.

Civil justice and crime.

Salween forms part of the Tenasserim civil and sessions Division, while the Deputy-Commissioner is *ex officio* District Judge. Civil work is light, and the District is on the whole remarkably free from crime. Cases of petty theft are confined to Papun and the large villages, but the culprits are seldom Karens, who are not generally given to petty thieving. Elephant-stealing, traffic in stolen elephants, and the illicit extraction and sale of teak logs, however, are forms of crime that have a great attraction for the Karen.

Revenue administration.

No thorough survey has yet been undertaken, and somewhat primitive methods of conducting revenue work prevail. Land is assessed according to the nature of the cultivation, as well as the quality of the soil. The rates for rice land are Rs. 1-8-0, R. 1, and 8 annas per acre, according to the quality of the soil and other conditions prevailing in the different parts of the District. Garden land and *kaing* are uniformly assessed at

Rs. 2 per acre. *Taungya* is assessed at 8 annas per *da* or man, and for revenue purposes a man is estimated to be capable of working 2 acres of *taungya* land. The aggregate number of holdings amounts to 9,650, and the average extent of each holding is 2 acres. No revision of assessments has been made for over ten years.

The following table shows, in thousands of rupees, the growth of the revenue since 1880-1:—

	1880-1.	1890-1.	1900-1.	1903-4.
Land revenue .	18	11	20	24
Total revenue .	29	27	37	54

The income of the District cess fund for the maintenance of communications and other local necessities amounted in 1903-4 to Rs. 8,000. Civil works absorbed Rs. 1,000 of this total, and District post charges a similar amount. There are no municipalities. Local and municipal government.

For police work the District Superintendent is assisted by an Assistant Superintendent and two inspectors, all of whom are stationed at head-quarters. There are 4 head constables, 9 sergeants, 102 constables, and 10 *yazawut-gaungs* (rural policemen), as well as a military police force of 125, including 2 native officers. The armed police are posted in eight stations. Police and jails.

The District possesses no jail. All prisoners but those sentenced to short terms of imprisonment are sent to the Moulmein jail. The short-term prisoners detained at Papun are confined in the police lock-up.

The standard of education in Salween is lower than anywhere else in the Province except in the Chin Hills. In 1901 the proportion of persons able to read and write was only 7·2 per cent. (5·1 males and 0·56 females). A school has been opened by the American Baptist Mission at Papun. It is under a Karen teacher, and is attended by about 40 boys and girls. Another small school has been started by the same mission in Bwado, a small Karen village south-east of Papun. There is also a small elementary school in Papun for Buddhist children, who are taught in the vernacular only. The Buddhist monks, as elsewhere in Burma, impart such education as is not given in the missionary and lay schools. Education.

The hospital at Papun is the only one in the District. It has accommodation for 9 in-patients. During 1903 the number Hospitals.

of in-patients treated was 113, and that of out-patients 1,808, while the number of operations performed was 44. Its income consisted of a grant from Provincial funds of Rs. 3,400, and Rs. 170 from subscriptions.

Vaccination. Vaccination is compulsory only in Papun. In 1903-4 the number of persons successfully vaccinated was 583, representing 15 per 1,000 of population.

Papun Township.—Township of Salween District, Lower Burma, conterminous with the District itself. Its head-quarters are at PAPUN village.

Papun Village.—Head-quarters of Salween District, Lower Burma, situated in 18° 3′ N. and 97° 28′ E., about the centre of the District, on the left or east bank of the Yunzalin river, 73 miles from the confluence of that stream with the Salween. It is confined between two ranges of hills and has the reputation of being extremely unhealthy. It is little more than a village, its population being 735 in 1877, and 1,422 in 1901. About 40 per cent. of the population are Shans, other nationalities, Karens, Burmans, and natives of India, making up the remainder in approximately equal proportions. Papun is the starting-point and terminus of caravan routes to and from eastern Karenni and the north-western portion of Siam, and contains a courthouse, a hospital, and two schools.

Boundaries, configuration, and hill and river systems. **Thaton District.**—A seaboard District in the Tenasserim Division of Lower Burma, lying between 16° 28′ and 17° 51′ N. and 96° 39′ and 98° 20′ E., and comprising the greater part of the country on each side of the lower reaches of the Salween river, with an area of 5,079 square miles. Its shape may be described as a four-sided figure, fairly regular, save for an indentation in the north caused by Salween District, of which the base or south-eastern side is inclined at a slope of rather less than 45° to the line of the equator: the angles at its four corners lie roughly at the four quarters of the compass. The northern angle is formed by the junction of the Salween and Thaungyin rivers, of which the latter forms the north-eastern boundary of the District, dividing it from Siam. The eastern angle is a point on the Thaungyin river about 70 miles to the south-east of its junction with the Salween. The south-eastern boundary, dividing it from Amherst District, is defined for the most part by the Hlaingbwe and Gyaing rivers, and the southern angle is marked by the junction of the latter of these streams with the Salween. The south-western boundary is the Gulf of Martaban; and the mouth of the Sittang river, which flows into the sea to the west of the Salween, lies at the western

angle of the District. The north-western boundary divides Thaton from the Districts of Pegu, Toungoo, and Salween, and runs for the greater part of its length along the valleys of the Sittang and Salween and their tributaries. The District is intersected by a number of hill ranges, which may be divided into three main groups. In the east and north-east towards the Siam frontier is the Dawna range, its ridges varying in height from 1,000 to 5,500 feet, which cuts off the valley of the Thaungyin river from the rest of the District. The range starts in the extreme north, and runs in a general south-easterly direction down the edge of Thaton and Amherst towards the Malay Peninsula. Divided from this range by a plain stretching for 50 to 60 miles across the valleys of the Salween and the Hlaingbwe is a much smaller system of hills, which may be regarded as the upper end of the well-defined Taungnyo range separating the Ataran valley in Amherst District from the seaboard townships. In Thaton District this upland is continued in the Martaban hills, starting opposite Moulmein on the farther side of the Salween and running, first north-west and then north, into Salween District. From this range to the sea on the west extends a rice plain, intersected by countless tidal creeks, and stretching up to the Sittang. In the north-west of the District, between this second ridge and the Sittang estuary is a limestone range (part of the Paunglaung system), which enters the District from the north and branches into spurs ending at Kyaikto and Bilin. The western spur is known as the Kelatha hills, and rises to an altitude of 3,650 feet opposite the village of Sittang. It is practically isolated from the main mass of the Paunglaung system.

Thaton is watered from end to end by numerous streams. The easternmost is the Thaungyin river, which rises in Amherst District, runs in a north-westerly direction, dividing Burma from Siam, and finally, after a course of about 200 miles, meets the Salween river in the north of the District. It is useful for floating down forest produce, but its numerous rapids detract from its value. The Hlaingbwe rises in the wedge of country between the Thaungyin and Salween rivers, where the Dawna range takes off, and flows for 120 miles to meet the Haungtharaw river in the south. Here the combined streams, under the name of the Gyaing, form the south-eastern border of the District, and run for 45 miles in a general westerly direction to meet the Salween just above Moulmein. The SALWEEN itself enters Thaton in its northern corner, separating it for some distance from Salween District. At about 17° 20′ N. latitude it

enters the Pa-an township, and thence its channel divides the District roughly into two halves, east and west. It pursues its southerly course down to Moulmein, where its waters are divided by the Bilugyun island into the two main mouths through which it flows into the sea. A few miles above Moulmein it is joined from the west by the Donthami (or Binhlaing) river, which rises in the hills on the northern border of the District, and winds down the eastern edge of the Martaban range. The area to the west of the Martaban hills is intersected by a network of tidal creeks, which give internal communication between Moulmein, Thaton, the Bilin, Kyaikto, and the Sittang. This tract is watered by only one large river, the Bilin, which rises in Salween District, and flowing between the Martaban and Bilin hills, enters the Gulf of Martaban after a course of 280 miles. The SITTANG, for the last 40 miles of its course, forms the western boundary of the District. It has done much damage lately by eroding the rice plain on the left bank near its mouth, destroying about 5,000 acres annually, while new land has been thrown up in Hanthawaddy and Pegu Districts on the opposite bank. Pegu has thus gained an area not far short of 100 square miles during the past twenty years.

Geology. Very little is known of the geology of Thaton. The Martaban and Dawna hills are of laterite, and the Bilin and Kelatha hills of a limestone formation, belonging to what has been denominated the Moulmein series of rocks. Isolated limestone hills, of the age of the Carboniferous limestone of Europe, occur frequently in the north-eastern portion of the District, illustrating the denudation to which the Palaeozoic beds of the Salween valley have been subjected. The low-lying tract to the south-west of the District has emerged within historical times from the sea, but it is not clear how far this has been due to the elevation of the sea-bottom, and how far to the level of the land being raised by deposits of silt.

Flora. The flora is of the type ordinarily met with in the wet areas of Lower Burma (see HANTHAWADDY DISTRICT). The main timber trees are referred to below under the head of Forests.

Fauna. A few wild elephants are to be found in the north-west and north-east of the District. Leopards abound, and venture at times into the purlieus of Thaton town. Tigers are not numerous, but bears are common. The barking-deer and hog deer are fairly plentiful in parts. Near Pagat on the Salween the serow is found in the hills. The District is remarkable for the scarcity of wild-fowl of all kinds. Very few of the migratory ducks appear to visit it.

Climate, temperature, and rainfall.

The climate, though moist and oppressive, is in general salubrious, exhibiting no extremes of heat or cold, and the littoral tract generally enjoys a cool breeze from the Gulf of Martaban. The average mean temperature in Thaton for four typical months during the decade ending 1901 is as follows: January, 74°; April, 84°; July, 77°; October, 82°. The rains are heavier in Thaton than in any other District in Burma, except, perhaps, Tavoy and Sandoway. The average annual rainfall recorded for the six years ending 1901 was 201 inches at Thaton and 196 inches at Bilin, a village a little farther north, but about the same distance from the coast.

History and archaeology.

The District comprises the larger portion of the ancient kingdom of the Mons or Talaings, known in Pāli literature as Ramannadesa, a name famous in sacred legend as the first repository of the Buddhist scriptures in Burma. Tradition points to Thaton town as the cradle of Buddhism in Burma; but Dr. Forchhammer has shown weighty reasons for placing the earliest Talaing capital rather at TAIKKALA or Kalataik, which he identifies with the Golamattikanagara of the Kalyāni inscriptions. This interesting place lies at the foot of a hill range in the Bilin township, the eastern and western slopes of which are still covered with ruins in an advanced state of decay, and is indubitably of great age. At the same time there can be no question that the present town of Thaton is a site of considerable antiquity, and it is probable that the ancient ruler Thāmala proceeded westwards from here to found the city of Pegu. The town of Martaban (Burmese, *Moktama*), exactly opposite Moulmein on the right bank of the Salween, is said to have been built about the same time as Pegu, namely A.D. 575. Whether Martaban or Thaton remained the capital of the eastern section of the Talaings after the foundation of Pegu is doubtful; but during the eleventh century Anawrata, the king of Pagan, overran Pegu and is said to have demolished the city of Thaton, so that it seems probable that the seat of government was even then at that town. In any case Martaban was refounded in 1269 by a king of Pagan, and probably succeeded politically to the position which Thaton had filled in the past. The Burmese monarch left one Aleinma as governor of Martaban. He was replaced for an act of insubordination, but shortly afterwards reappeared on the scene with some Shan followers, slew his successor, and resumed the government of the province, presumably as a vassal of Siam, which had long disputed this

territory with the Talaings. In 1281 a native of Martaban arose, killed Aleinma, and was recognized as a governor by the Siamese under the name of Wariyu. Wariyu joined the king of Pegu in driving out the king of Pagan, but shortly afterwards turned on his Talaing ally and annexed the kingdom of Pegu. In the reign of his successor the kingdom of Martaban extended from Tenasserim to Prome and Bassein, and during the endless Burmo-Siamese wars the capital was frequently besieged and captured. It came with the rest of the Talaing cities under Burmese dominion at the time of Alaungpayā, and was the point where that great warrior's forces assembled prior to the expedition against the Siamese which culminated in his death. It was easily occupied by the British in the first Burmese War in 1824, but was afterwards given up, what is now Thaton District, with the exception of that part of it lying east of the Salween, being returned to Burma. In the second Burmese War Martaban was occupied by a force under General Godwin in 1852, and held till the end of the war, when the whole District was taken over by the British. After forming for many years portions of the old Shwegyin and Amherst Districts, Thaton was eventually constituted a separate Deputy-Commissioner's charge in 1895, and since then its limits have not been altered. The annexation of Upper Burma was the signal in 1885–6 for a somewhat serious rising in the west of the District, which was not suppressed till the assistance of the troops had been called in.

The highest point of the Kelatha range, known as the Kelatha peak, is crowned by a pagoda built at the end of the fifteenth century by king Dhamacheti (who is also credited with having set up the Kalyāni inscriptions at Pegu). Another eminence on a range farther to the east bears the Kyaiktiyo pagoda, one of the four most sacred shrines of Burmese Buddhism. This pagoda, which is about 15 feet high, is built on a huge rounded egg-shaped boulder, perched on the very summit, and overhanging the edge of a projecting and shelving tabular rock, which rises perpendicularly from the valley below. Pious Buddhists believe that it is retained in its position solely by the power of the relic, a hair of Gautama, enshrined within it. Other pagodas of archaeological interest are the Thagya pagoda at Thaton, the Kyaikkalunpun at Sittang, the remains of the 1,000 pagodas at Kyaikkatha, the Tizaung pagoda at Zokthok, and the Zingyaik on the hills of the same name north-west of Martaban. There are also caves containing innumerable images of Buddha of all sizes at Kawgun, Dham-

matha, Bingyi, and Pagat. Besides Thaton, Taikkala, and Martaban, the District has in Sittang (near the mouth of the Sittang river) a town once prominent in the history of Burma. Like Martaban Sittang was once a famous fort and the seat of government; but, as in the case of Martaban, little now remains to bear witness to its former importance.

The population of the District, as recorded at the last four enumerations, is as follows: (1872) 165,077, (1881) 229,941, (1891) 266,620, and (1901) 343,510. The principal statistics of area and population for 1901 are given in the following table:— The people.

Township.	Area in square miles.	Number of		Population.	Population per square mile.	Percentage of variation in population between 1891 and 1901.	Number of persons able to read and write.
		Towns.	Villages.				
Kyaikto	607	1	139	45,082	74	+ 55	12,086
Bilin	937	...	224	55,112	59	+ 13	10,761
Thaton	417	1	183	67,928	163	+ 80	11,977
Paung	353	...	142	55,071	156	+ 19	8,358
Pa-an	730	...	277	76,591	105	...	4,545
Hlaingbwe	2,035	...	208	43,726	21	+ 54	1,434
District total	5,079	2	1,173	343,510	68	+ 29	49,161

THATON, the District head-quarters, and KYAIKTO are the only two towns. The population has more than doubled in the past thirty years. This high rate of increase is largely due to immigration into the fertile rice-bearing areas along the Sittang and the Gulf of Martaban. The only District supplying immigrants on a considerable scale is Amherst, though there has been a certain influx also from the Shan States and Siam. Indian immigrants number nearly 14,000, three-fifths of whom come from Madras and more than one-fifth from Bengal. There are altogether about 13,000 Hindus and 7,000 Musalmāns. Christians number nearly 2,100, but the great majority of the population are Buddhists. Burmese is the vernacular of about one-third of the people, Karen of about another third. Of Talaing speakers there are about 35,000, and of Taungthu speakers rather more than 32,000.

The most numerous race is the Karen, which numbered 124,800 in 1901, forming three-fourths of the population of that part of the District which lies east of the Salween, and about one-fourth of that of the rest of the District. The Burmans number 73,400. They compose roughly two-thirds of the Race and occupation.

population of the Kyaikto subdivision in the north-west, and one-third of that of the Thaton subdivision in the south-west. East of the Salween they are few in number. The total of Talaings is 74,600; they inhabit the southern townships of Pa-an and Paung, south of Thaton town. An important tribe are the Taungthus, more largely represented than in any other District of Lower Burma. Their total in 1901 was 37,400. They form about a fifth of the population of the Paung and Pa-an townships in the south, and of the Thaton township in the centre of the District. They also inhabit the hills in the Bilin township, spreading over into Toungoo and Salween Districts. The Siamese number nearly 10,000 and the Chinese about 3,000. In 1901 about 74 per cent. of the population were found to be engaged in, or dependent on, agriculture. About one-seventh of the agricultural population is supported by *taungya* or shifting cultivation.

Christian missions.

There are just over 2,000 native Christians, mostly Karen Baptist converts. There is an American Baptist mission at Thaton.

General agricultural conditions.

The agricultural conditions are determined chiefly by the heavy rainfall, and by the peculiarities of the numerous streams and rivers thus fed. The soil is generally fertile, especially in the alluvial plains, in the south and west between the hills and the sea, from which the bulk of the rice comes; and it may be said that cultivation is successfully practised wherever the water-supply is sufficient to develop, without overwhelming, the crop. The chief need in the low-lying seaboard areas is not irrigation but drainage. Many drainage schemes have been proposed, and some have been executed, chiefly by private enterprise. In the north-eastern portion of the District a series of small valleys or basins is found, in the bottom of which water remains more or less the whole year round. Rice is planted on the sloping sides of the basins and at different levels as the water falls. Irrigation is called into play here also, but generally on a small scale.

Cultivation is found on the banks of rivers at those points where the floods are usually not so severe as to prevent the development of a crop, and *taungya* cultivation is practised by Karen tribes in the hilly parts of the District. The main crop is rice. Beyond this there is little but garden cultivation. In addition to the ordinary *kaukkyi* (cold-season) and *mayin* (hot-season) rice, three special kinds are cultivated, known as *shansaw*, *tawla*, and *patā*. The last of these, like *mayin*, needs to be irrigated. *Tawla* rice, which depends on the later rains for

success, is also irrigated sometimes, whereas *shansaw* is an early rice. The whole system of tillage adopted is one of following the water as it falls; and, if successful, the lower the ground the more generous the soil is likely to be, and the larger the out-turn that may be expected.

Chief agricultural statistics and principal crops.

The following table gives the main agricultural statistics of the District for 1903-4, in square miles:—

Township.	Tota area.	Cultivated.	Irrigated.	Forests.
Kyaikto	607	120	...	2,267
Bilin	937	123	...	
Thaton	417	207	2	
Paung	353	224	3	
Pa-an	730	188	7	
Hlaingbwe	2,035	81	...	
Total	5,079	943	12	2,267

Of the total area cultivated in 1903-4, rice occupied 871 square miles, garden cultivation 45 square miles (mostly in the Pa-an, Paung, and Thaton townships), and sugar-cane 4,600 acres (nearly all in the Bilin township). Garden cultivation is of various kinds. Plantains are plentiful; durians (900 acres) are largely grown near Thaton town and in the Paung township; and areca palms occupy 2,100 acres, mostly in the Bilin and Thaton townships.

Improvements in agricultural practice.

The assessed area has increased by 38 per cent. since the formation of the District. Much of this increase is due to survey, but still there is no doubt that cultivation is extending with rapidity. In 1880-1 the total cultivated area was about 384 square miles; in 1890-1 it was about 539; and by 1900-1 it had risen to 872 square miles.

No demand exists for loans under the Land Improvement and Agriculturists' Loans Acts, which is attributed by the local officers to the prosperity of the people. In the past, however, free recourse was had in bad years to agricultural advances. In 1895-6 the loans aggregated Rs. 16,900, and in 1896-7 Rs. 9,250.

Cattle.

Cattle-breeding is extensively practised, though cattle are also freely imported from Siam, and buffaloes and goats are reared to a small extent. The District is famous for its trotting bullocks, but their qualities appear to be due rather to training than to breed. The area set apart for grazing-grounds is nearly 100 square miles, which is ample for the requirements.

Irrigation and fisheries.

There are no Government irrigation works. Irrigation is practised in the north-eastern areas, but generally on a small scale. The Thaton township possesses several drainage canals, of which the most important is that known as the Danukyaikkaw, connecting a small stream running close to Thaton (called the Sa *chaung*) with the Bilin river. In 1903–4 about 12 square miles were irrigated, the greater part lying in the Pa-an township.

The District contains 72 fisheries, of which the Shwelanbo fishery in the Kyaikto township is the most important. The revenue derived from them in 1903–4 amounted to Rs. 41,500. In his report on the operations of 1894–5, the Settlement officer wrote as follows:—

'In Thaton nearly every holding has its tank, used till the harvest is over for drinking purposes, and when the paddy has been either sold or carted home the tank is baled out and the fish taken.'

Forests.

The forests fall within two divisions, namely, the Thaungyin and the West Salween, the river Salween being the dividing line. The most important clothe the Dawna range along the north-east boundary of the District: in fact, it may be said that those on the eastern slopes of this range include some of the most valuable teak forests in Burma, the greater part of which have been 'reserved.' Many other valuable species of trees are also found on the eastern hills, such as *padauk* (*Pterocarpus indicus*), *pyinma* (*Lagerstroemia Flos Reginae*), *kanyin* (*Dipterocarpus laevis*), *thingan* (*Hopea odorata*), and *kaunghmu* (*Parashorea stellata*); but the weight of their timber and the numerous rapids and other obstacles to navigation that exist in the Thaungyin and Salween rivers render their exploitation impossible. The forests on the west of the Dawna range are much drier and poorer in quality, but extraction is easy, and as a consequence most of the timber which has not been 'reserved' has been removed from them. The vegetation to the west of the Salween is of a more varied but less valuable character. Evergreen forests grow on the alluvial lands bordering the coast, but are of little importance from an economic point of view. Tropical evergreen and mixed forests occur farther inland, and are often found intermingled. These forests comprise about 200 species of trees, including teak, *pyinma*, *pyingado* (*Xylia dolabriformis*), and *thingan*. Many kinds of bamboo are also met with, which form the undergrowth for the loftier tree vegetation.

About 500 acres of a large teak plantation in the Thaung-

yin division lie in Thaton District. The other teak plantations cover only 177 acres. The forest receipts in 1903–4 amounted to $1\frac{1}{4}$ lakhs. The total area of 'reserved' forests is 118 square miles, and that of unclassed forests 2,149 square miles. All the main streams are utilized for the floating of timber.

Mines and minerals. The only mineral of commercial importance in the District is limestone, which is obtainable from several hills in the Pa-an township and gives rise to a considerable industry of lime-burning, notably along the banks of the Donthami stream. The stone is extracted either by hammering, or by the action of fire, and is burnt in brick-work kilns. It is then packed in gunny-bags holding from 100 to 150 lb. by coolies, who are hired at the rate of Rs. 3–8–0 per 100 bags. The actual process of lime-burning is generally carried on by Burmans. The out-turn in 1903–4 was about 670 tons. Most of the lime produced is taken down the Donthami river to Moulmein, the rest being consumed locally. Pottery clay, laterite, and sandstone are also obtained in the District.

Manufactures. By far the greater part of the population is engaged in agriculture and cattle-breeding, and manufactures may be said to be almost non-existent. Salt is made in the seaboard townships, the methods used being the same as those described under AMHERST DISTRICT. In the littoral and riverain villages fishing and fish-curing afford occupation for a considerable section of the community, and the village of Hlaingbwe enjoys some celebrity for the mats which it produces.

Commerce and trade. The chief export is paddy. The produce of the Kyaikto subdivision finds its market in Rangoon during the wet season, and generally speaking in Moulmein during the dry; that from the rest of the District is sent down to Moulmein. The route from Kyaikto to Rangoon is by the Kyaikto-Sittang Canal, and thence via Shwegyin and Pegu. The paddy for the Moulmein market is carried by the Bilin, Donthami, and Salween rivers. The Bilin-Martaban road and the tramway from Thaton to Duyinzeik also play an important part in the carriage of paddy. Teak timber and firewood are sent out of the District; but, with the exception of lime, Thaton has practically no other export of importance. A small but fairly steady trade is carried on with Siam. Some of it passes through Amherst District, but a fair proportion goes direct through Tedawsakan on the Siamese frontier. Three main trade routes converge at Tedawsakan, known as the Pa-an, the Kwanbi, and the Yinbaing routes. Registration is effected at Pa-an, Kwanbi, and Yinbaing, all either on or near the eastern bank of the Salween.

In 1903–4 the total value of the imports and exports across the Siamese frontier was 8 lakhs and 6·8 lakhs respectively. The principal imports were nearly 3,000 head of cattle, valued at over 1½ lakhs, and silver (4 lakhs); while the chief exports were European cotton piece-goods (1½ lakhs), silk piece-goods (¾ lakh), and silver (2½ lakhs).

Communications. A light railway or tramway 8 miles long, built in 1883, runs along a metalled road from Thaton town to Duyinzeik on the west bank of the Donthami river, whence a steam-launch plies on week-days to Moulmein. A railway from Pegu to Martaban is now in process of construction. It will run to the west of the existing road between Kyaikto and Martaban, which is the main artery of the District. The principal roads are as follows: Martaban to Kyaikto (83 miles), passing through Thaton and Bilin; Thaton to Pa-an (24 miles); Hlaingbwe to Zathabyin (53 miles); Pa-an to Naunglon (11 miles); Hlaingbwe to Shwegun on the Salween (14½ miles); Yinnyein to Kyettuywethaung on the Donthami river (15¼ miles); and Alu to Upper Natkyi (38 miles), continued northwards into Salween District. About 151 miles of road are maintained from Provincial revenues, and about 26 miles from the District cess fund.

A navigable canal, 13¼ miles long, connects Kyaikto with the Sittang river, and is served by a steam-launch which runs daily in connexion with a service to Shwegyin and Pegu. Launches also ply from Moulmein as far as Duyinzeik on the Donthami river, and Shwegun on the Salween. Most of the other rivers are navigable by country boats for some part of their course. There are eighteen leased ferries.

District subdivisions and staff. The District consists of three subdivisions, each of which is divided into two townships. The Pa-an subdivision consists of that part of the District which lies east of the Donthami river; and its townships, Pa-an and Hlaingbwe, lie respectively to the west and east. The remainder of the District is divided into the Kyaikto and Thaton subdivisions. The latter is the southernmost of the two, and includes Thaton and Paung. Of the two townships of the Kyaikto subdivision, Kyaikto is the western and Bilin the eastern. The subdivisions and townships are in charge of the usual executive officers, under whom again are about 428 village headmen. The only Forest officer is the subdivisional officer at Thaton, who works under the Deputy-Conservator in charge of the West Salween Forest division. The District is included in the Martaban Public Works division, with subdivisions at Thaton, Kyaikto, and Pa-an.

Thaton forms, with Amherst, the charge of a District Judge, with head-quarters at Moulmein. The three subdivisional officers are *ex officio* judges of the subdivisional courts, and the township officers of Hlaingbwe and Pa-an are similarly judges for their respective township courts; but there are two whole-time civil township judges, one of whom presides in the Kyaikto and Bilin and one in the Thaton and Paung township courts. Sessions cases are tried by the Sessions Judge of Tenasserim. The District has a bad reputation for cattle-theft and dacoity. Gambling cases are also very numerous, especially in the Kyaikto subdivision. Civil justice and crime.

The formation of Thaton District dates only from 1895, and it is impossible to give a complete account of the revenue history of the tracts composing it previous to that date. The tract now known as the Pa-an subdivision formed part of Amherst District from the annexation of Tenasserim in 1826 till 1895. The chief landmarks in its revenue history are the introduction of the acre system in 1842–3 by the Commissioner, Major Broadfoot (who thirty years later was still known as the 'Acre *Mingyi*'), Captain Phayre's settlement in 1848–9, Captain Horace Browne's settlement in 1867–8, and a summary enhancement which took place in 1879–80. The first two of these measures produced a considerable falling-off in revenue, and the last two a substantial increase. The Thaton and Kyaikto subdivisions were annexed in 1852, and at first formed part of Shwegyin District; but the former, then known as the Martaban subdivision, was transferred in 1866–7 to Amherst, of which it remained a part till the formation of Thaton District. Its revenue history up till that date, however, remains distinct, and may be separately traced. After annexation the land was reported fertile, and a rate of Rs. 2–8–0 per acre was imposed. In 1863 this rate was lowered by Colonel Phayre to Rs. 2, and when the subdivision was included in Amherst, various rates from Rs. 2 to 12 annas an acre were levied. Revenue was first collected in the Kyaikto subdivision in 1853–4 at the rate of Rs. 2 per acre. In 1859–60 the assessment was raised in part of the subdivision to Rs. 2–8–0, and reduced elsewhere to Rs. 1–8–0 and Rs. 1–4–0. In 1863–4 the rates were again lowered, and a further reduction took place in 1864–5. In 1871–2 further changes were effected, and in 1880–1 a summary enhancement was sanctioned. A holding survey of the Kyaikto subdivision was made in 1889, which resulted in an increase of revenue exceeding 45 per cent. In the year of the formation of the District as now Revenue administration.

constituted, the assessed area was returned at 685 square miles, with a net revenue demand of 7·6 lakhs, giving an average rate of Rs. 1–11–8 per acre. Settlement operations in the tracts now composing the District were completed in 1896–7. In 1898–9, the year after the revised rates had fully come into force, the area of assessed land in the District was reported as 847 square miles, and the net revenue demand as 11 lakhs, which gave an average rate of Rs. 2–0–3 per acre. The increase in area was due partly to extension of cultivation, and partly to the supplementary survey introduced during those years. About half the increase of revenue may be set down to the enhanced rate introduced after settlement. The rates on rice land vary at present from 8 annas to Rs. 2–12–0 per acre, except in the Kyaikto subdivision, where they rise to Rs. 3–8–0 per acre; and on garden land from R. 1 to Rs. 5 per acre. Miscellaneous cultivation is taxed at rates ranging from Rs. 1–8–0 to Rs. 3, *dani*-palm plantations are assessed at Rs. 3 per acre, and sugar-cane at from Rs. 1–8–0 to Rs. 4, except Madras sugar-cane, on which the higher rate of Rs. 5 is levied. The average area of a holding of rice land is 15¼ acres, that of garden land 1¼ acres. Land revenue brought in nearly 11 lakhs in 1900–1, and 11·4 lakhs in 1903–4. The total revenue from all sources increased from 16·8 lakhs in 1900–1 to 18·5 lakhs in 1903–4.

Local and municipal government.

The income of the District cess fund for the maintenance of roads and various local needs amounted to 1·5 lakhs in 1903–4, of which Rs. 61,000 was spent on public works. There are two municipalities, THATON and KYAIKTO.

Police and jails.

The District is divided into three police subdivisions, corresponding with the civil subdivisions. The Superintendent of police has under him an Assistant-Superintendent, 4 inspectors, and 10 head constables; and the civil police force consists of 38 sergeants and 273 constables, distributed in 13 police stations and 4 outposts. A force of military police, 170 strong, belonging to the Toungoo battalion, is stationed at the various township head-quarters. The District possesses no jail. Prisoners sentenced to long terms of imprisonment are sent to Moulmein to serve out their sentences.

Education.

Thaton District is still backward as regards education, a fact which may be attributed to the preponderance of the Talaing, Karen, and Taungthu elements in its population. In 1901 the percentage of literate persons for each sex was 23·5 in the case of males and 4·1 in that of females, or 14·3 for both sexes together. The proportion of male literates is lower than in

any District of Burma proper, except Bhamo, Northern Arakan, and Salween. The total number of pupils has increased from 11,337 in 1900–1 to 14,225 in 1903–4 (including 2,005 girls). In the last year there were 3 special, 11 secondary, 211 primary, and 329 elementary (private) schools. Neither of the two municipal towns contains schools worthy of special mention. That educational progress is being made, however, is shown by the fact that since 1896–7 the number of public schools has more than trebled, while the number of pupils has more than doubled. Special schools are maintained for Karens and Talaings under deputy-inspectors belonging to these races. The total expenditure on education in 1903–4 amounted to Rs. 23,900, of which Rs. 1,900 was provided from municipal funds, Rs. 17,700 from the District cess fund, Rs. 2,150 from Provincial funds, and Rs. 2,150 from fees.

There are three hospitals, with accommodation for 39 in-patients. In 1903–4 the number of cases treated was 23,041, of whom 509 were in-patients, and 455 operations were performed. The total income amounted to Rs. 31,600, towards which municipal funds contributed Rs. 26,700, and Local funds Rs. 4,100. Hospitals.

Vaccination is compulsory only in the municipal towns of Thaton and Kyaikto. In 1903–4 the number of persons successfully vaccinated was 3,129, representing 10 per 1,000 of population. Vaccination.

[E. Forchhammer, *Notes on the Early History and Geography of British Burma* (1883); Taw Sein Ko, *Notes on an Archaeological Tour through Ramannadesa* (1893); A. Gaitskell, *Settlement Reports* (1896 and 1897); Captain H. Des Voeux, *Settlement Report* (1898).]

Kyaikto Subdivision.—Subdivision of Thaton District, Lower Burma, consisting of the KYAIKTO and BILIN townships.

Kyaikto Township.—Township in Thaton District, Lower Burma, lying between 17° 14′ and 17° 39′ N. and 96° 39′ and 97° 15′ E., to the east of the southernmost reaches of the Sittang, with an area of 607 square miles. It contains 139 villages, and one town, KYAIKTO (population, 6,637), the headquarters. The population was 29,159 in 1891, and 45,082 in 1901. The Sittang-Kyaikto Canal passes diagonally across the township, which is hilly in the north and east, but fertile and low-lying in the south-west, and has suffered much from erosion in recent years. The area cultivated in 1903–4 was 120 square miles, paying Rs. 1,27,500 land revenue.

Bilin.—Township in the Thaton District of Lower Burma, on the eastern coast of the Gulf of Martaban, lying between 16° 57′ and 17° 42′ N. and 97° 0′ and 97° 32′ E., with an area of 937 square miles. It consists for the most part of an alluvial plain, stretching from the hills in the north to the sea. It contains 224 villages, and the population, which was 48,524 in 1891, had risen by 1901 to 55,112. The head-quarters are at Bilin, a village of 2,610 inhabitants, on the right bank of the Bilin river. The township is famous for its sugar-cane, which is grown in considerable quantities on the rich well-watered lowlands. The area cultivated in 1903–4 was 123 square miles, paying Rs. 1,74,100 land revenue.

Thaton Subdivision.—Subdivision of Thaton District, Lower Burma, consisting of the THATON and PAUNG townships.

Thaton Township.—Township in Thaton District, Lower Burma, lying between 16° 47′ and 17° 13′ N. and 97° 8′ and 97° 30′ E., with an area of 417 square miles. It is bounded on the west by the Gulf of Martaban. The population was 37,713 in 1891, and 67,928 in 1901, showing an increase of no less than 80 per cent. The township contains one town, THATON (population, 14,342), the head-quarters, and 183 villages. It is hilly in the east, but in the west a flat alluvial plain stretches away to the Gulf of Martaban. The area cultivated in 1903–4 was 207 square miles, paying Rs. 3,00,600 land revenue.

Paung.—Township in the Thaton District of Lower Burma, lying between 16° 28′ and 16° 52′ N. and 97° 14′ and 97° 36′ E., with an area of 353 square miles. It is bounded on the north by the Thaton township, on the east and south by the Donthami and Salween rivers, and on the west by the Gulf of Martaban. The township is fertile and thickly populated. The population was 46,332 in 1891, and 55,071 in 1901, inhabiting 142 villages. The head-quarters are at Paung, a village of 1,651 inhabitants, on the western slopes of the Martaban hills, which run north and south through the centre of the township. The ancient site of Martaban lies at its south-eastern corner on the Salween, opposite the port of Moulmein. The area cultivated in 1903–4 was 224 square miles, paying Rs. 3,23,600 land revenue.

Pa-an Subdivision.—Subdivision of Thaton District, Lower Burma, consisting of the PA-AN and HLAINGBWE townships.

Pa-an Township.—Township in Thaton District, Lower Burma, lying between 16° 33′ and 17° 26′ N. and 97° 27′ and

98° 0′ E., with an area of 730 square miles. It is a narrow strip of country running northwards from immediately above Moulmein to the borders of Salween District. The Salween river crosses it diagonally in the centre, and in the north and south forms respectively its eastern and western border. The population was 76,481 in 1891, and 76,591 in 1901. The people, who are mainly Karens, reside in 277 villages. The head-quarters are at Pa-an, a village of 2,851 inhabitants, on the left bank of the Salween. The area cultivated in 1903–4 was 188 square miles, paying Rs. 1,64,000 land revenue.

Hlaingbwe.—Easternmost township of Thaton District, Lower Burma, lying between 16° 43′ and 17° 51′ N. and 97° 35′ and 98° 20′ E., with an area of 2,035 square miles. It is separated from Siam on the east by the Thaungyin river, and is hilly and sparsely populated, its inhabitants being mostly Karens. The population was 28,411 in 1891, and 43,726 in 1901, distributed in 208 villages, of which the largest is Hlaingbwe (population, 1,208), the head-quarters, on the east bank of the Hlaingbwe river, 108 miles from Moulmein. The area cultivated in 1903–4 was 81 square miles, paying Rs. 49,500 land revenue.

Kyaikto Town.—Head-quarters of the subdivision and township of the same name, in the north-west corner of Thaton District, Lower Burma, situated in 17° 18′ N. and 97° 1′ E., on the Kadat river. It stands at the foot of the hills, on the edge of the flat country which stretches southwards to the Gulf of Martaban, and on the Sittang-Kyaikto Canal, which connects the town with the Sittang, and thus with Pegu and Rangoon, bringing it within a twelve hours' journey of the Provincial capital. Kyaikto is a flourishing trade centre, and its population in 1901 (6,637) was nearly double that of twenty years before. The town was constituted a municipality in 1889. The receipts and expenditure of the municipal fund during the ten years ending 1901 averaged Rs. 16,500 and Rs. 17,400 respectively. In 1903–4 the municipal income was Rs. 20,300 (markets, &c., Rs. 12,100; house tax, Rs. 3,900). The expenditure in the same year amounted to Rs. 22,000 (hospitals and conservancy, Rs. 3,300 each). The municipal hospital has accommodation for 16 in-patients.

Taikkala.—An ancient capital in the Bilin township of Thaton District, Lower Burma, the ruins of which lie between Ayetthema and Kinywa in 17° 2′ N. and 97° 2′ E. Its Pāli name is Golamattikanagara, and it is described as follows in the Kalyāni inscriptions:—

'At that time a king, called Sirimasoka, ruled over the country of Suvanna Bhūmi. His capital was situated to the north-west of the Kelasabhapabbatachetiya. The eastern half of this town was situated on an upland plateau, while the western half was built on a plain. This town is called, to this day (A.D. 1476), Golamattikanagara, because it contains many mud-and-wattle houses resembling those of the Gola people. The town was situated on the sea-shore. Thus the Religion was established in this country of Ramannadesa by the two *theras* (Sona and Uttara) in the 236th year that had elapsed since the attainment of Parinirvāna by the Fully Enlightened One.'

Hitherto the theory has been that, at the conclusion of the Third Buddhist Council, Sona and Uttara were sent as missionaries to Taikkala; and that during the fifth century A. D. Buddhaghosha, who is reputed to have brought a complete set of the *Tripitaka* from Ceylon, repaired to the same town. Doubt has, however, been thrown on these traditions.

Taikkala has been identified with the Takola of Ptolemy and the Kalah of the Arabian geographers, and with the Takkala of Professor Lassen, who, however, marked it erroneously on his map a few miles to the north of Tavoy. Up to the sixteenth and seventeenth centuries it was a great seaport. The sea-shore is now about 12 miles to the west; but cables, ropes, and other relics of sea-going vessels are frequently dug up in the vicinity of the ancient capital.

Thaton Town.—Head-quarters of the District of the same name in Lower Burma, situated in 16° 55′ N. and 97° 22′ E. Its name Thaton is believed to be a corruption of Saddhama (*sat-dharma*, i. e. 'good law'), and may be connected with the legendary fame of the city as a repository of the Buddhist scriptures. The town is picturesquely situated at the very foot of the forest-clad slopes of the Martaban hills, wedged in between a hill ridge and a stretch of level alluvial land, about 10 miles in width, which separates it from the Gulf of Martaban. Flat and well wooded, hemmed in on the east, but open to the cold-season breeze from the north and the south-west monsoon, which blows across the rice flats from the sea, Thaton enjoys a climate which is on the whole pleasant and salubrious. The rainfall is heavy, but the town is well drained, and the heat, which rarely rises above 95°, is generally tempered by cool air currents.

Thaton was in ancient times a flourishing port and the capital of an independent kingdom, known in Pāli literature as Ramannadesa. This was the country of the Mons, who since their final conquest by the Burman king Alaungpayā in

the middle of the eighteenth century, have come to be known as Talaings. Tradition also points to Thaton as the centre and mother city of the Taungthus, who still form a considerable element in the population, as they do also in the Shan State of Thaton or Hsahtung farther north; but as regards the part played by this people in the past in Thaton the legends cannot be accepted without reserve. Trustworthy dates concerning the history of Thaton are, in fact, extremely few, and the town's early history may be briefly disposed of.

It appears from Buddhist writings preserved in Ceylon and elsewhere (particularly the Mahāvanso) that at the third great synod held in Pātaliputra (the modern PATNA), it was determined to send missionaries to all lands to preach the doctrines of Buddhism; and accordingly two missionaries, Sona and Uttara, were dispatched to Suvanna Bhūmi, which is identified with the country of which Thaton was the capital. About the middle of the fifth century A.D., a copy of the Buddhist scriptures was brought over to Suvanna Bhūmi from Ceylon by Buddhaghosha, a learned native of Bihār. Both these traditions have, however, been doubted[1], and there is reason for discrediting the belief of the Burmese, that the earliest form of Buddhism in Burma was of the Southern School. In the eleventh century, in the reign of king Manuha, the town was sacked after a famous siege by Anawrata, the Burman king of Pagan, who took away with him many elephant-loads of relics and manuscripts, as well as the most learned of the priesthood. So thorough was the work of destruction that Thaton henceforward figures hardly at all in either legend or history. It is true that Sir Arthur Phayre identified Thaton with the port called Xeythoma which was visited by Nicolò di Conti about 1430, but the identification appears to be exceedingly uncertain. It seems more probable that at that date Thaton had long since ceased to be upon the sea-coast, and the port in question is more likely to have been Sittang.

The date at which the sea began to withdraw from Thaton is not exactly known, but is probably indicated by the foundation of Pegu and Martaban, the cities which took its place, the one as a capital and the other as a seaport. These towns are said to have been founded by emigrants from Thaton in A.D. 573 and 575, respectively; and it seems safe to infer that Thaton was already in its decadence when Anawrata finally accomplished its ruin. Though in the past Thaton itself has usually been identified as the landing-place of Sona and Uttara,

[1] See V. A. Smith, *Indian Antiquary*, 1905, p. 180.

and later of Buddhaghosha, it should be mentioned that Dr. Forchhammer has shown weighty reasons for placing the scene of these events, if they actually occurred, at TAIKKALA or Kalataik, at the foot of the Kelatha hills.

Little remains at the present day to attest the ancient magnificence of Thaton, except the ruins of the city walls. The chief remains of pagodas are situated between the site of the citadel and the south wall. At present the largest is a modern one, of the usual form, built over an old one and called the Shwesayan. Near it are three square ones. The principal of these, known as the Thagya or Muleik pagoda, lies on the eastern side of the great pagoda, and still exhibits signs of having once been a beautiful and elaborate structure. It is built entirely (as are almost all pagodas in that part of the country which was inhabited by the Talaings) of hewn laterite. The whole face of the pagoda has been carved in patterns, but the most remarkable part is the second storey; into the face of this are let red clay entablatures, on which various figures are depicted in relief. Few now remain, and they are much mutilated and covered with whitewash; the scenes and costumes depicted, however, are very curious.

The population of Thaton, which had dwindled in 1853 to a village of thirty or forty houses, was 14,342 in 1901, and is increasing steadily. A large proportion of the non-Burman inhabitants are Taungthus. There are a few Karens and a good many natives of India. The increase in population during the past twenty years is due, in large measure, to the communication established in 1883 with the outer world by the 8 miles of light railway which connect the town with Duyinzeik on the Donthami river, whence a steam-launch (run by the Irrawaddy Flotilla Company) plies daily to Moulmein. The town is also connected by a metalled road with Kyaikto on the north-west and Martaban on the south-east. Thaton possesses a flourishing market, a District courthouse, civil and military police lines, and a municipal hospital. It has been administered since 1887 by a municipal committee, composed of five *ex officio* and ten nominated members. The income and expenditure of the municipal fund during the ten years ending 1901 averaged Rs. 25,500 and Rs. 23,500 respectively. In 1903–4 the income was Rs. 38,000, the principal sources being house tax (Rs. 4,700) and market dues (Rs. 18,000). The expenditure was Rs. 57,000, the most important items being administration (Rs. 6,800), roads (Rs. 4,500), and hospital (Rs. 25,000).

Amherst District.—District in the Tenasserim Division of Lower Burma, lying between 14° 56′ and 17° 2′ N. and 97° 27′ and 98° 51′ E., with an area of 7,062 miles. It is bounded on the north by Thaton District; on the east by the Dawna hills and Siamese territory; on the south by the Mahlwe hills, a spur of the Dawna range which separates it from Tavoy District; and on the west by the Gulf of Martaban. Boundaries, physical aspects, and hill and river systems.

The District occupies the country lying south and east of the mouths of the Salween, Gyaing, and Ataran rivers, and consists for the most part of alluvial plains, watered by these streams, and shut in on the east by the Dawna hills and on the west by the low Taungnyo chain, running parallel to the coast. In the extreme east is a narrow and densely wooded region, broken by the Dawna range and its spurs; to the south lies the valley of the Ye river, wedged in between the Taungnyo ridge and the sea, and drained by numerous small streams flowing in a general westerly direction. Bilugyun, an island about one mile west of Moulmein, is also traversed by a ridge of hills, geologically a spur of the Thaton hill system, running north and south. The chief hill range in the District is the Dawna, 5,500 feet high at its loftiest point, in 16° 5′ N. and 98° 42′ E. It throws out numerous spurs and runs south-east for 200 miles, dividing the waters of the Haungtharaw stream from those of the Thaungyin. This range presents in most parts the appearance of a wooded plateau of laterite cut up into hills by drainage. In places the underlying rocks project into the bed of the Thaungyin and indicate volcanic agency. The main range and its offshoots form the watershed between the Bay of Bengal and the Gulf of Siam. The hills to the west of the main range undulate for some distance gently to the south-west, but end in barren limestone ridges. From the Sadaik hill in 15° 17′ N. and 98° 15′ E., in the extreme south of the District, the Taungnyo chain extends north-west to Moulmein, forming the Ataran watershed, and continuing on the farther side of the Salween in the shape of a stretch of upland known as the Martaban hills. North of Moulmein and east of the Salween lies a short range of limestone rocks 16 miles long. Several passes over the Dawna range connect the District with Siamese territory.

The Salween, Gyaing, Ataran, and Thaungyin are the chief rivers. The SALWEEN enters the District a few miles north of Moulmein, where it is joined on the east by the Gyaing and Ataran. For hundreds of miles from its source in the far northern mountains through the Shan States, the Salween's

channel has been swift, narrow, and turbulent. Here, however, it opens out into a broad, shallow waterway obstructed by shoals, which prevent the entry of sea-going vessels, except at its southern mouth. It enters the sea about 28 miles due south of Moulmein. The Gyaing, formed by the junction of the Hlaingbwe and the Haungtharaw streams, flows almost due west. It is choked by islands and sandbanks, but is navigated by native boats and launches all the year round. The Ataran river is formed by the junction of the Zami and Winyaw streams in the south of the District. It is a narrow, deep, and sluggish waterway, running in parts of its course between high banks, shut in by dense overhanging foliage. Its course is in the main north-westerly, and shortly before entering the Salween it flows close behind the town of Moulmein. The Thaungyin rises in the Dawna hills in the extreme east of the District, and, after flowing north-west for 200 miles, joins the Salween in Thaton District. Its breadth varies from 100 to 1,000 feet, but numerous rapids render its navigation impossible. No large lakes are found, but adjoining Kawkareik town is a shallow depression about 1,000 acres in extent known as the Hlaing Lake.

Geology. The District is of a mountainous character. The Moulmein group of rocks, consisting (in ascending order) of hard sandstone, grey shaly beds, fine soft sandstone, and hard thick limestone, are well developed: the last-named series takes the form of steeply scarped hills with overhanging cliffs, which prove them to have been at some remote geological period sea-girt. They rise precipitously from the plain, and constitute one of the chief features of the picturesque scenery around Moulmein. Hot springs occur in several places, always near the limestone outcrops. The largest are at Rebu, near the village of Ataran on the Ataran river, in some of which the water issues at a temperature of 130°. These springs deposit carbonate of lime, carbonic acid gas being evolved in large quantities. Lead ore has been found in the Taungnyo hills.

Botany. The vegetation is similar to that of the adjacent District of Thaton. It has been little studied, except from a forest point of view, but ranges from the swamp to the evergreen hill class. There is excellent timber, the *dani* palm and bamboos abound, and fruit trees are exceptionally plentiful. Orchids are common in the hills.

Fauna. The chief wild animals met with are the tiger, the leopard, the *hsaing* or *tsine* (*Bos sondaicus*), the bison, and the hog.

Wild dogs attack hog and deer in packs. In some parts of the District the rhinoceros is found, and the Malayan tapir is reported to have been seen in the Ye township.

The low-lying country along the large rivers and the coast is hot, and enjoys no real cold season, but the hilly parts of the District experience quite a low temperature in the winter. The nights, however, except for short periods in April and October, are fairly cool even in the plains. Malarial fever, the curse of the Arakan coast, is conspicuous by its absence. The mean maximum and minimum temperatures throughout the year at Moulmein are 89° and 73° respectively. There is no great daily variation, and the climate is equable throughout the year. Climate and temperature.

Amherst, like all the coast Districts of Burma, receives a more than ample supply of moisture. The annual rainfall at Moulmein during the ten years ending 1900 averaged 188 inches. It is heavier at Amherst (213 inches), and lighter at Kawkareik (166 inches). Showers in April and May precede the bursting of the south-west monsoon in June, from which time heavy rains continue till the end of August, getting lighter towards October. From the beginning of November to April there is practically no rain. The District is rarely visited by cyclonic disturbances; but the heavy rains are from time to time the cause of floods which, even though they do not as a rule occasion loss of human life, are most destructive to the crops. Rainfall.

In ancient days Amherst formed part of the Talaing or Mon kingdom, and it is still the main stronghold of the Talaings, who are probably purer here than in any other part of Burma. The District was for centuries disputed territory between the Mons and the Siamese. When the Burmese kingdom extended southwards into the Talaing country in the thirteenth century, it stopped short at the Salween river, on the western side of which Martaban (now in Thaton District) was founded. The country east of the Salween was at that time Siamese territory. At the end of the thirteenth century the kingdom of Martaban was founded by Wariyu, an ally of Siam; and shortly afterwards this was amalgamated with the kingdom of Pegu and eventually absorbed the Districts of Amherst, Tavoy, Tenasserim, and Mergui, extending northwards to Prome, and constituting the Talaing realm (see PEGU). In the seventeenth and the early part of the eighteenth century the Siamese regained possession of the present District, but were expelled in the middle of the latter century by the Burmese conqueror Alaungpayā, who History and archaeology.

died within two marches of Martaban in 1760 on his return from an expedition into Siam. The District became British territory by the Treaty of Yandabo in 1826, the Salween becoming the southern boundary of the Burmese kingdom. A dispute as to the possession of Bilugyun Island, opposite Moulmein in the Salween, was amicably settled at the end of the war, the British proving that the main current of the Salween ran west of the island and not east by floating down two coco-nuts, which were followed and watched on their course to the sea by British and Burmese representatives in boats. There was no fighting in the District during the first Burmese War. The head-quarters of the District were at first at Amherst, but were moved thence to Moulmein shortly after 1826, for strategical reasons, Martaban being then Burmese territory. Moulmein served as a base for the troops engaged in the attack upon Martaban (1852), which was the first incident of note in the second Burmese War, but otherwise the District played no part in this campaign.

Bilugyun contains about sixty pagodas, held to be of great antiquity, the most famous being the Kalaw pagoda in the north of the island, supposed to have been erected over a hair of Gautama Buddha. At the north end of the ridge running behind the town of Moulmein is the Kyaikthanlan pagoda, built to commemorate the defeat of a Siamese invasion, and, according to tradition, the depository of sacred relics. To the south of this is the Uzina or Kyaikpadaw pagoda, supposed, by the pious, to have been erected by Asoka. This and other very ancient pagodas on the same spur are all said to contain sacred relics. Close to the river bank north of Moulmein is another commemorative shrine, called the Kyaikpane. By Amherst Point, on the rocks about 300 feet from the beach, is the famous Yele pagoda, which is freely visited by male worshippers, though no woman is allowed to approach within 100 feet of it. From it the Burmese, or more properly the Talaing, name of Amherst (Kyaikkami, 'the floating pagoda') is said to be derived. Near Lamaing village, in the Yelamaing township, stands the Sandaw pagoda, said to be as old as the Shwedagon in Rangoon, where an annual festival is held in March, attended by the devout from all over the District. Near Ye are plainly discernible the vestiges of two earth and stone walls and a moat which, reports assert, once encompassed a large city called Meinma-myo ('the city of women'). It was inhabited, according to tradition, by Vestals, who were eventually carried away by one Bogale, an Indian pirate. The limestone hills on

the Gyaing-Ataran plains contain numerous caves, the best-known being the Karonku caves, about 7 miles from Moulmein, which are said to have afforded shelter in olden times to the Talaing inhabitants when fleeing from the cruelties of the Burmese.

The people.

The population of the District at the last four enumerations was as follows: (1872) 129,948, (1881) 180,738, (1891) 233,539, and (1901) 300,173. The chief statistics of area and population for 1901 are given in the following table:—

Township.	Area in square miles.	Number of Towns.	Number of Villages.	Population.	Population per square mile.	Percentage of variation in population between 1891 and 1901.	Number of persons able to read and write.
Moulmein	1,258	1	40	66,614	2,220	+ 7	21,057
Kawkareik	30	1	162	35,111	18	+ 56	2,459
Kyaikmaraw	1,963	...	230	62,173	25	+ 45	4,940
Chaungzon	2,457	...	68	41,880	220	+ 23	8,130
Mudon	190	..	106	52,746	224	+ 29	7,539
Kyaikkami	236	...	86	15,676	17	+ 21	2,444
Yelamaing	928	...	50	25,973	21	+ 43	3,872
District total	7,062	2	742	300,173	43	+ 28	50,441

The chief town is MOULMEIN, the head-quarters of the District. Amherst was almost depopulated at the time of annexation by the struggles of the previous centuries, and there has been a constant stream of immigration since from India as well as from other portions of Burma. The population is dense along the lower reaches of the Salween in the Chaungzon and Mudon townships, but in the hilly areas in the east the villages are small and scattered. Five-sixths of the inhabitants are Buddhists; and of the 43,000 persons who are representatives of Indian religions, about three-fifths are Hindus and two-fifths Musalmāns. The language most in use is Talaing, which is spoken by about five-sixths of the Talaing inhabitants. Alaungpayā forbade its use in his dominions during his reign, but his sway did not extend over the present District, so that the Talaing tongue has been preserved to a greater extent here than elsewhere.

Race and occupation.

The most numerous race is the TALAING, numbering 132,300. They form two-thirds of the population of the seaboard townships, and about a third of the population of the central township of Kyaikmaraw, practically the Ataran valley. Next in number come the KARENS (the Sgaw and Pwo tribes

being about equally represented), with a total of 52,400. They form three-quarters of the population of the Kawkareik township in the east of the District, including the Haungtharaw valley and the hills on the frontier, and about a third of the Kyaikmaraw township in the centre. The Burmans of Amherst number only 50,600. They comprise half of the population of Moulmein, and are fairly evenly distributed throughout the District; but in no case, except perhaps in that of Kyaikkami, do they exceed one-third of the population of any township. There is a very large Indian colony, about 43,400 in all, of whom only 25,500 are immigrants, the balance having been born in the Province. Three-fourths of the immigrant foreigners come from Madras, the rest from Bengal. More than 2,000 were born in Chittagong, but these are a very shifting population. Most of the Indians are domiciled in Moulmein. Chinamen (also confined for the most part to Moulmein) number 5,300, a larger number than in any other District except Rangoon. Taungthus, so numerous in Thaton, number only 2,340, and there are small colonies of Shans and Siamese.

The number of persons dependent upon agriculture in 1901 was 189,039, or 63 per cent. of the total population, a proportion rather below the Provincial average. Of this number 21,722 were dependent on *taungya* (shifting) cultivation alone.

Christian missions.

Christians are fairly numerous. More than half the District total of 4,805 are Baptists, the American Baptists having two missions, one to the Karens and one to the Telugus. There is a Roman Catholic church at Moulmein, beyond which town that communion does not spread, and an Anglican mission. The number of native Christians in 1901 was 3,385.

General agricultural conditions.

The low-lying portions are fertile and lend themselves admirably to rice cultivation. The best land is the alluvial soil of Bilugyun, the island off Moulmein. Here the salt water fertilizes the plants, and is drained off before the ear begins to ripen. Along the course of the Gyaing and Ataran rivers, which comprise a considerable portion of the cultivable area, the soil may be divided roughly into three classes: first, the sandy surface soil lying high near the banks; next, the earth on the slope rising from the bank which receives the drainage of the rivers; and lastly the clay soil, farther from the river, but liable to flood. The planting of rice is often delayed by heavy rainfall, and the ripening of the ear prevented by too early cessation of the rains. As a rule the only preparation made for the reception of the seed is by driving a herd of buffaloes over the land, though a harrow (*te*) is run

over it occasionally before this is done. In the Ataran valley, where the floods rise suddenly to a great height, the system of treading and sowing broadcast is preferred to that of ploughing and transplanting, as these operations take some time. *Taungya* cultivation is carried on in the hilly tracts in the east of the District, and in the Bilugyun Island township.

The gardens on the islands at the mouth of the Gyaing, Ataran, and Salween rivers are of long standing, and contain for the most part areca and coco-nut palms, sugar-cane, and plantains, while those opposite Kado produce vegetables. The sugar-cane grown on these islands and on Bilugyun is planted either in virgin soil, covered at high tide, on which alluvial deposit collects, but which is out of reach of the flood, or in old fallows. The crop exhausts the soil to such an extent that only three or four consecutive harvests are gathered. The method of cane cultivation is similar to that followed in the Districts of Upper Burma. Madras canes were introduced shortly after annexation and are now almost exclusively used. The islands on the Darebauk, the northern branch of the Salween, bear the *dani* palm, which produces leaves for thatching after five years, and liquor after six years, as a rule; and the same palm borders many of the tidal creeks in the Yelamaing and Kyaikkami townships. Oranges are specially cultivated in the gardens of the District, mainly on the banks of the Ataran river. To render the fruit sweet for the market, the garden must be well watered for two months before the fruit is plucked.

In the following table the main agricultural statistics for 1903–4 are shown, in square miles :— Chief agricultural statistics and principal crops.

Township.	Total area.	Cultivated.	Irrigated.	Forests.
Moulmein	30	16	...	6,000
Kawkareik	1,963	50	0·7	
Kyaikmaraw	2,457	140	1·0	
Chaungzon	190	115	...	
Mudon	236	144	...	
Kyaikkami	928	33	...	
Yelamaing	1,258	73	...	
Total	7,062	571	1·7	6,000

As throughout Lower Burma, the staple food-crop is rice, which occupied more than 500 square miles in 1903–4. Garden cultivation covers over 47 square miles and sugar-cane about 1,100 acres, while 100 acres contain rubber-trees. The

area under tobacco cultivation is insignificant, experiments with Havana seed having proved a failure.

Improvements in agricultural practice.

The area cultivated in 1880–1 was 241 square miles, a total which had increased by 1890–1 to 286 square miles. Since then the latter figure has been exactly doubled. With the exception of an advance of Rs. 1,000 for the purpose of rubber-cultivation in 1900, no Government loans have been made for agricultural purposes during the last four or five years. Large loans have, however, been granted from time to time in earlier years, such as, for instance, 1894–5.

Cattle, &c.

Cattle and buffaloes are bred locally, and are plentiful throughout the District, the former being most common. They are of a good breed. Ponies are brought from the Shan States and Siam. Goats are fairly numerous, most of them belonging to the Musalmān community. An abortive attempt at sheep-breeding from animals imported from Calcutta was made some years ago.

Irrigation.

There are at present no fisheries in the District. The only irrigation is from small private works; the area irrigated in 1903–4 was about 1,100 acres, divided between the Kawkareik and Kyaikmaraw townships.

Forests.

The District is rich in teak forests, and it is believed that those on the eastern side of the Dawna range are among the finest in Burma. For administrative purposes the District lies within the limits of three Forest divisions: the Agency division, the Thaungyin division, and the Ataran division. The Agency division (now combined with the Kado division, which deals for the most part with timber that has entered Burma from beyond the frontier) has no local limits. It is concerned with the disposal of timber extracted by Government agency from the forests of the Ataran, Thaungyin, and West Salween Forest divisions. The Thaungyin division includes the rich teak forests on the eastern slopes of the Dawna range and the drier forests on the western side, extending into Thaton District. The rapids and rocky gorges of the Thaungyin river prevent the extraction of timber, too heavy to float, from the eastern forests, though they contain large quantities of valuable trees. All timber obtained from these areas is floated out in single logs to the salving stations 60 to 80 miles above Moulmein. The greater part (4,500 acres) of a very large Government teak plantation in this division lies in Amherst District. The forests on the western side of the Dawna range are poorer in quality but easy to work. They have patches of inferior teak and other timber, such as *padauk* (*Pterocarpus indicus*), *kanyinbyu*

(*Dipterocarpus alatus*), *pyinma* (*Lagerstroemia Flos Reginae*), *in* (*Dipterocarpus tuberculatus*), and *thitya* (*Shorea obtusa*). The teak forests of the Ataran division, which lies to the west of the Thaungyin division in the south of the District, are almost entirely comprised in the basins of the Zami and Winyaw. Isolated patches of teak occur in the tracts drained by the Haungtharaw river, but obstructions in this stream are a considerable hindrance to extraction. Large quantities of timber are, however, floated down the Ataran. All of this is rafted and brought for disposal to the Kado dépôt on the Salween, a few miles above Moulmein. The total forest area is about 6,000 square miles, of which about one-sixth is 'reserved.' The forest receipts in 1903–4 amounted to 6·5 lakhs.

Minerals. Minerals are worked on a very small scale. Pottery clay and laterite are obtained near Moulmein, lead ore is found in the Taungnyo hills, and there is abundant limestone in isolated rocks that stand up out of the plain north and east of Moulmein. Salt is manufactured in the coast townships in two ways, from salt water and from *sissa* or saline earth. This latter is obtained by scraping the surface of marshy land over which the sea has flowed. When collected, it is placed on a bamboo sieve, and water is allowed to percolate and drain into a pot, where it is boiled. In the other method salt water from a creek is raised and allowed to stand for some time in carefully prepared fields, and finally passed into a tank. The season lasts only from January till the monsoon breaks, but the more well-to-do manufacturers, who store the brine in tanks, are able to continue boiling till July.

Arts and manufactures. In Moulmein town a certain amount of gold and silver-work is produced. Ivory-carving is a speciality, the objects carved being paper-cutters, handles for knives and forks, Buddhas, chessmen, and other small articles. Moulmein is also a centre of mill-industries, and contains 26 saw-mills and rice-mills, besides a steam joinery and a foundry.

Commerce and trade. The sea-borne commerce passes entirely through Moulmein, and statistics of this trade will be found in the article on MOULMEIN TOWN. The principal exports are rice and timber, which are sent to Europe, India, and Farther Asia. The imports are mainly coastwise, and consist for the most part of vegetable oils, *ghī*, tobacco, gunny-bags, betel-nuts, *til*, sugar, and spice from Calcutta, Bombay, and the Coromandel Coast; cotton twist and yarn, cotton, silk, and woollen piece-goods, machinery, metals, kerosene oil, &c., from Rangoon; and tea, sugar, matches, and betel-nuts from Hongkong and the Straits.

The overland trade with Siam is considerable. Most of it goes north-eastwards through the frontier station of Myawadi, over what is known as the Tadanku route from Moulmein; but a second route, called the Kyeikdon route, leads, south of Tadanku, into Southern Siam. The principal imports are ponies from Northern Siam, silk piece-goods from Southern Siam, and cattle from both. The principal exports into Siam are European piece-goods, silver, and jewellery. The total imports and exports between the District and Siam were valued in 1880–1 at Rs. 1,46,000 and Rs. 51,000, and in 1903–4 at 25 lakhs and 17 lakhs respectively.

Communications.

At present there are no railways, nor is there any immediate prospect of railway operations within the District; but a steam ferry will shortly connect Moulmein with the railway to Pegu, now under construction, which is to end on the western side of the Salween opposite Moulmein. Of sea and river communication with the outside world there is no lack. Moulmein is connected with Rangoon by a line of steamers running three times a week, and a regular steamer service from Moulmein passes down the Tenasserim coast, calling at the small port of Ye within the limits of the District. Native boats ply between Amherst and Moulmein (30 miles) in one tide if required, and *sampans* perform the passage between Amherst and Ye in the dry season. Steam-launches run between Moulmein and Kado on the eastern bank of the Salween, as well as between Moulmein and several other points on the Gyaing, Haungtharaw, and Ataran rivers, including Kyondo, where the cart-road to Siam begins.

The most important metalled road is the Moulmein-Amherst road (53 miles), constructed at a cost of 6½ lakhs. Another road, bridged but not metalled, 54½ miles long to the frontier (the Tadanku route), is complete from Kyondo to Kawkareik, and the remainder is in course of construction.

District subdivisions and staff.

For administrative purposes the District is divided into three subdivisions: Moulmein, consisting of one township, which bears the same name; Kawkareik, comprising the KAWKAREIK and KYAIKMARAW townships; and Amherst, comprising the four seaboard townships of CHAUNGZON, MUDON, KYAIKKAMI, and YELAMAING. These are in charge of the usual executive officers, under whom are 31 circle *thugyis* and 153 village *thugyis*. The charges of the former are being gradually broken up. At Moulmein, besides the ordinary District head-quarters staff, there is a Port Officer, who is also Collector of Customs. The District forms a subdivision of the Amherst Public Works

division, which includes Tavoy and Mergui Districts. Three Deputy-Conservators of Forests hold charge of the Ataran, Thaungyin, and Kado *cum* Agency divisions.

Civil justice and crime.

The judge of the Tenasserim Divisional court has his head-quarters at Moulmein. Amherst District, with Thaton, forms the jurisdiction of a District judge, who is also judge of the Moulmein Small Cause Court. The township and sub-divisional courts are presided over by the respective township and subdivisional officers, except in the case of the Chaungzon and Mudon townships, the civil work of which is disposed of by a judge sitting at Moulmein. There is an additional magistrate at Moulmein. As the District is on the frontier, dacoity is not uncommon, but has decreased of late; there are every year, for the same reason, a large number of opium and excise prosecutions. Thefts, including cattle-thefts, are numerous, but criminal work is not so heavy as in the delta Districts.

Revenue administration.

When the Tenasserim Districts were annexed in 1826, they were considered so unproductive that their restoration to Burma was contemplated; but the discovery of rich teak forests settled matters in favour of their retention. During native rule the revenue was collected by *myothugyis* under the governor of Martaban; the regular revenue consisted only of a tax of 10 per cent. in kind on the produce of the land, but additional imposts were levied for special purposes from time to time. The amount each headman collected was fixed; but he was free to exact what he could, and in practice the authority of the governor of Martaban stopped short 20 miles south of Moulmein. This system in a modified form was continued for some time after annexation. An establishment of *thugyis* was organized in 1827–8, and a grain tax was levied, based on a rough estimate of the out-turn of paddy. For some time the rates were fixed for a period of years; but this arrangement was found unsatisfactory, and on the expiry of a seven years' term in 1841–2, the system of a so-called settlement was abandoned. In 1842–3 rates per acre were introduced by Major Broadfoot, the Commissioner, the rates on rice land varying from R. 1 to Rs. 3–4–0, and on garden land from 6 annas to R. 1. Captain (afterwards Sir Arthur) Phayre was deputed in 1847 to report on the rice-growing tracts of the District; and as a result of his inquiries a systematic revenue scheme was introduced, providing for the measurement of cultivation by *kwins* and prescribing the *taungya* tax. In 1848–9 the rice rates were generally reduced,

and a further reduction was effected in 1862–3. A resettlement and revision of rates took place in 1867–8, and rice rates from R. 1 to Rs. 2–4–0 were levied, except in a few cases where a rate of Rs. 2–8–0 was fixed. These were enhanced in 1879–80, the maximum, however, being still Rs. 2–8–0. The seaboard townships and the lands on either side of the main rivers in the interior were settled between 1891 and 1896. The rates on rice land vary from 12 annas to Rs. 3 per acre; on gardens from Rs. 1–8–0 to Rs. 6; on *dani* plantations, Rs. 3 and Rs. 4; on miscellaneous cultivation, Rs. 1–8–0 to Rs. 3. Sugar-cane is ordinarily taxed at Rs. 1–8–0 to Rs. 3, but Madras sugar-cane in the maritime townships is assessed at Rs. 5. The capitation tax was levied in 1828–9, but in the first instance only on the Karens and Taungthus. In 1841–2 the tax was abolished, but was reintroduced two years later at rates which were in subsequent years varied from time to time. Owing to the formation of Thaton District, it is not possible to obtain trustworthy statistics of the revenue collected in 1881 and 1891. The land revenue has increased from 6·4 lakhs in 1900–1 to 7 lakhs in 1903–4, while the total revenue from all sources has increased in the same period from 14 to 15 lakhs.

Local and municipal government.

The District cess fund is derived chiefly from a levy of 10 per cent. on the land revenue, and is administered by the Deputy-Commissioner for the maintenance of communications and other local needs. Its income in 1903–4 was Rs. 75,000, and the expenditure included Rs. 26,000 on public works. The only municipality is MOULMEIN TOWN, but KAWKAREIK is administered by a town committee.

Lighthouses.

Two lighthouses have been built for the protection of shipping entering or leaving the port of Moulmein. On Double Island, about 12 miles south of Amherst and 7 from the coast (15° 53′ N. and 97° 35′ E), is a dioptric fixed light visible at 19 miles, erected in 1865. Its object is to guide ships from the south to Moulmein, and prevent their running up the Sittang river. A somewhat feeble light erected on Amherst Point was replaced in 1903 by a light visible at 17 miles on Green Island near the point. This new light is a third order dioptric, with equal flashes and eclipses of 15 seconds, and a complete revolution in two minutes.

Police and jails.

The District Superintendent of police is aided by an Assistant Superintendent in charge of Moulmein town, the Amherst and Kawkareik subdivisions being in charge of inspectors. The civil police force consists of 5 inspectors,

15 head constables, 40 sergeants, and 483 constables, distributed in 14 police stations and 7 outposts. Of military police there are 222, under 4 native officers belonging to the Toungoo battalion, and the force is distributed at Moulmein and the head-quarters of townships. The existing Central jail at Moulmein, long one of the most important in Burma, consists of a collection of antiquated barracks with accommodation for 738 prisoners. The jail industries are of the ordinary kind. A new jail is at present under construction, which, when completed, will be able to house 600 persons.

Education. The proportion of persons able to read and write in 1901 was 16·8 per cent. (20·1 males and 5·6 females). The number of pupils was 13,616 in 1901 and 16,570 in 1903–4, including 3,253 girls. In the latter year the District contained 33 secondary, 235 primary, 9 special, and 242 elementary (private) schools. The institutions most worthy of mention in Moulmein are the Government high and normal schools, where large numbers of vernacular teachers are trained; St. Patrick's boys' school, with a fair proportion of European and Eurasian pupils; and a blind school (the only one in the Province), in which the pupils are taught reading and cane and bamboo work. There are 33 Karen indigenous schools under Government inspection scattered throughout the District. In 1903–4 the contributions to education, other than from the District cess fund, were Rs. 94,500 from Provincial funds, Rs. 51,300 from fees, and Rs. 4,900 from subscriptions; total, Rs. 1,50,700, all of which was spent on schools in Moulmein town. The District schools are supported from the cess fund, and cost Rs. 17,000 in the same year.

Hospitals and dispensaries. There are 4 hospitals with accommodation for 127 in-patients, 1,830 of whom, in addition to 24,236 out-patients, were treated in 1903. The number of operations was 1,112. The income of the hospitals was Rs. 39,500, of which Rs. 25,600 was contributed by the Moulmein municipality, Rs. 7,300 by Local funds, and Rs. 2,300 by subscriptions. There is a leper asylum at Moulmein, where 29 in-patients and 23 out-patients were treated in 1903.

Vaccination. Vaccination has been compulsory in Moulmein town since 1885. In 1903–4 the number of persons in the District successfully vaccinated was 14,472, representing 48 per 1,000 of population.

[A. P. Pennell, *Settlement Report* (1893); A. Gaitskell, *Settlement Reports* (1896 and 1897).]

Moulmein Subdivision.—Subdivision and township in the north-west corner of Amherst District, Lower Burma, with an area of 30 square miles, 15 of which are comprised in the Moulmein municipality and 6 in Moulmein port. The township contains that part of the District (outside municipal limits) which lies north of the Gyaing river, where Kado (population, 2,934), an important forest dépôt, is situated. The population, excluding the Moulmein municipality and port, was 8,168 in 1901 (chiefly Talaings and Burmans), distributed in 40 villages. The area cultivated in 1903-4 was 16 square miles, paying Rs. 23,400 land revenue.

Kawkareik Subdivision.—Subdivision consisting of the eastern half of Amherst District, Lower Burma, with head-quarters at KAWKAREIK. It contains two townships, KAWKAREIK and KYAIKMARAW.

Kawkareik Township. — North-eastern township of Amherst District, Lower Burma (formerly known as the Haungtharaw township), lying between 15° 37′ and 17° 2′ N. and 97° 59′ and 98° 51′ E., with an area of 1,963 square miles, bounded on the west by Haungtharaw, and on the east by Thaungyin and by Siamese territory. It is for the most part very hilly and very sparsely inhabited. The population was 22,512 in 1891, and 35,111 in 1901, distributed in 162 villages and one town, KAWKAREIK (population, 3,919), the head-quarters. The area cultivated has more than doubled during the past ten years. In 1903–4 it reached an aggregate of 50 square miles, paying Rs. 39,300 land revenue.

Kyaikmaraw.—Central township of Amherst District, Lower Burma, formerly known as the Ataran township. It comprises the entire drainage area of the Ataran river, lying between 15° 14′ and 16° 36′ N. and 97° 41′ and 98° 35′ E., with an area of 2,457 square miles. In the valley of the Ataran population is dense, but elsewhere there is forest and villages are scarce. The population increased from 42,776 in 1891 to 62,173 in 1901, distributed over 230 villages, Kyaikmaraw (population, 1,597), on the left bank of the Ataran river, 10 miles to the south-east of Moulmein, being the head-quarters. The area cultivated has increased 50 per cent. in ten years, and in 1903–4 was 140 square miles, paying Rs. 1,38,600 land revenue.

Amherst Subdivision.—Subdivision consisting of the western half of Amherst District, Lower Burma. It contains four townships, CHAUNGZON, MUDON, KYAIKKAMI, and YELAMAING. The head-quarters are at MOULMEIN TOWN.

Chaungzon.—Township of Amherst District, Lower Burma (formerly known as Bilugyun), lying between 16° 14′ and 16° 31′ N. and 97° 27′ and 97° 38′ E., and composed wholly of the island of BILUGYUN, with an area of 190 square miles. The density of population, 220 to the square mile, is high; and the area under cultivation, which includes practically the whole island with the exception of a strip of hill land running down its centre, is extensive. The population, which is largely Talaing, increased from 34,056 in 1891 to 41,880 in 1901, distributed over 68 villages, Chaungzon, a village near the centre of the island (population, 1,112), being the head-quarters. The area cultivated in 1903–4 was 115 square miles, paying Rs. 1,97,800 land revenue.

Mudon.—Seaboard township of Amherst District, Lower Burma (formerly known as Zaya), stretching down the coast opposite the island of Bilugyun, from the Taungnyo hills to the sea, between 15° 58′ and 16° 27′ N. and 97° 36′ and 97° 55′ E., with an area of 236 square miles. It is flat, fertile, and thickly populated. The population, which is largely Talaing, increased from 40,761 in 1891 to 52,746 in 1901, distributed in 106 villages, Mudon (population, 2,358), a village on the Moulmein-Amherst road, 9 miles south of Moulmein, being the head-quarters. The area cultivated in 1903–4 was 144 square miles, paying Rs. 2,12,600 land revenue.

Kyaikkami.—Coast township in Amherst District, Lower Burma (formerly known as Wagaru), lying south of the Mudon and north of the Yelamaing township, bounded by the Taungnyo hills and the sea, between 15° 37′ and 16° 5′ N. and 97° 33′ and 97° 56′ E., with an area of 928 square miles. The population was 12,988 in 1891 and 15,676 in 1901, distributed in 86 villages, Kyaikkami or Amherst (population, 1,373) being the head-quarters. This village, situated on a bend of the sea-coast in the extreme north-western corner of the township, 30 miles south of Moulmein, was the District head-quarters for a short time after the first Burmese War, but is now of little importance except as a bathing resort and a pilot station. The density of population (only 17 to the square mile) is low. The area cultivated has more than doubled in ten years, and was 33 square miles in 1903–4, paying Rs. 27,600 land revenue.

Yelamaing.—Southernmost township of Amherst District, Lower Burma, on the borders of Tavoy, lying along the coast, between 14° 56′ and 15° 38′ N. and 97° 43′ and 98° 13′ E., with an area of 1,258 square miles, most of which is hilly and jungle-clad. The population increased from 18,158 in 1891 to 25,973

in 1901, distributed over 50 villages. The head-quarters are at Ye, a small town of 3,500 inhabitants, situated on the wide estuary of the Ye river, which has regular steamer communication with Moulmein and other coast ports. The area cultivated has increased by 130 per cent. in ten years, and in 1903-4 was 73 square miles, paying Rs. 56,700 land revenue.

Kawkareik Town.—Head-quarters of the subdivision of the same name in Amherst District, Lower Burma, situated in 16° 35′ N. and 98° 14′ E. The town lies in the north-east of the District, nearly 50 miles due east of Moulmein, stretching along both banks of the Kawkareik, a stream which flows from the western slopes of the Dawna range into the Haungtharaw river, and is navigable up to Kawkareik during the rains by boats of fairly heavy burden. The town is an important trade centre on the main caravan route between Moulmein and Siam. Population (1901), 3,919. In 1884–5 Kawkareik was placed in charge of a town committee, which was reconstituted in 1903. The income administered by the town authorities was Rs. 8,700 in 1903–4, and the expenditure was Rs. 9,000, devoted chiefly to public works. The town possesses a civil hospital, with eight beds, which is supported by the town fund.

Moulmein Town (Burmese, *Mawlamyaing*). — Head-quarters of Amherst District and of the Tenasserim Division of Lower Burma, situated in 16° 29′ N. and 97° 38′ E., 28 miles from the sea, on the left bank of the Salween, at its confluence with the Gyaing and Ataran. In configuration the town has roughly the form of an inverted 'L,' the portion represented by the horizontal line following the course of the Salween, and that represented by the vertical line the course of the Ataran. The former contains four divisions of the town, the latter one.

As a British settlement, Moulmein dates from the year 1827, when it was selected by General Sir Archibald Campbell as the capital for the newly acquired Tenasserim province, its claims being held superior to those of Amherst in the south and Martaban in the west. One of Moulmein's chief titles to fame is the great beauty of the scenery in which it is set. The visitor entering the river from the Gulf of Martaban is met by banks crowned with the most varied of evergreen foliage, a marked contrast to the low-lying muddy flats that characterize the mouths of the Hooghly or Irrawaddy. Right and left, parallel with the banks, are low ranges of hills, on which are perched pagodas here and there; and up the river beyond the town a limestone eminence about 2,000 feet in height, known as the Duke of York's Nose, stands in bold relief against the sky.

From the plains surrounding the town isolated limestone rocks rise abruptly, forming one of the most marked characteristics of the Moulmein scenery.

Coming to the town itself, through the horizontal arm of the inverted 'L' runs a range of hills 300 feet in height, on which are built two magnificent pagodas, the Uzina and Kyaikthanlan, the former in the centre, the latter at the northern end. Midway between the two is a third pagoda, from which the midday gun is fired and ships are signalled. From this ridge a view, hardly to be equalled in Burma for beauty, is obtained of Moulmein nestling among the trees on the western slopes. To the north and west lie the meeting-place of the rivers, the shipping in the stream, the wooded islands in the channel, Martaban with its glistening pagoda overhanging the water, and the dark hills of Bilugyun. To the east, the Ataran may be seen winding through the green plain, and the Taungwaing hills rise up in the south. The town, which has an area of 15 square miles, is laid out on a fairly regular plan, but is not altogether worthy of its gorgeous setting. It stretches, long and narrow, along the bank of the Salween. Three main roads run north and south, parallel to the river, two throughout the entire length of the town, and one for about 2 miles. Numerous cross-roads, mostly unmetalled, run east and west, one being continued by means of the Nyaungbinzeik ferry into the country beyond the Ataran, thus forming the main avenue by which food-supplies are brought into the town. The European residences are situated to the west of the central ridge, for the most part in spacious and well-kept grounds. The most notable buildings are Salween House, the official residence of the Commissioner, built on the ridge; the masonry law courts and Government offices, at the foot of the rising ground; the General Hospital; the Government schools; and three churches, St. Matthew's, St. Patrick's, and St. Augustine's. The old cantonment, from which the troops have now been removed, centres around a parade-ground towards the north of the town. The business quarter adjoins the river bank in the west. The new jail lies at the foot of the ridge towards the northern end of the town in the old cantonment area. A blot on the town at present is the indiscriminate way in which cooly barracks, native hamlets (*bastis*), and lodging-houses have been allowed to spring up in all the quarters. The *bastis* are composed of long narrow houses on three sides of a square, divided into small windowless compartments. The backyard is common to the inmates of all the houses, and contains a shallow well from

which both bathing and drinking water is obtained. Near it are cesspits; goats and calves find a hospitable refuge in the living rooms and cooking-places, and a herd of cows is usually accommodated under a lean-to shed in the backyard. Reconstruction and improvements in sanitation are now, however, being undertaken.

The population of Moulmein was 46,472 in 1872; 53,107 in 1881; 55,785 in 1891; and 58,446 in 1901. The last figure includes 8,544 Musalmāns and 19,081 Hindus, the increase of population in the last decade being almost entirely due to Hindu immigration from Madras. The chief native industries pursued are gold and silver work and ivory-carving; but Moulmein also contains 14 steam saw-mills, 3 rice-mills, and 4 mills in which both sawing and milling are carried on, besides a steam joinery (also dealing with rice), and a foundry.

The port of Moulmein has an interesting history. Between the years 1830 and 1858 ship-building was carried on to a considerable extent, ample supplies of teak being drawn from the rich forests in the surrounding country. The advent of the iron ship and the steamer has destroyed the larger branch of this industry, which is now confined to the construction of small country craft. Of late a great obstruction to the prosperity of the oversea trade of Moulmein has been the presence of bars in the channel of the Salween near its mouth, but Government has lately taken steps to keep the lower reaches of the river open to steamers of deep draught by means of a powerful dredger. The growth in the trade of the port appears from the following figures. The imports in 1880–1 were valued at 98 lakhs, in 1890–1 at 99 lakhs, in 1900–1 at 1·2 crores, and in 1903–4 at 1·5 crores; while the exports were valued in 1880–1 at 1·48 crores, in 1890–1 at 1·28 crores, in 1900–1 at 1·88 crores, and in 1903–4 at 2 crores. Of the imports, only about one-tenth come direct from foreign (extra-Indian) ports, the greater part being received, more or less equally, from Calcutta and Rangoon. From foreign ports the chief imports (mainly from the Straits) are betel-nuts, sugar, and provisions of various kinds. The imports from Bengal consist mainly of specie in payment for rice and other exports, and those from Rangoon of re-exported foreign goods. The exports, on the other hand, go mainly to foreign ports, this portion being valued in 1903–4 at 1·35 crores, of which by far the greater part was partially husked rice (valued at 1 crore), teak and rice-bran being the next most important commodities. About half the rice is shipped to Suez, where it is to a large extent reconsigned to

European ports. The exports from Moulmein to the Straits for Farther Asian ports were valued in 1903-4 at 36 lakhs, and those to England at 22¾ lakhs, while those to Indian ports were valued in the same year at 68 lakhs, of which 21 lakhs went to Calcutta, 18 to other Burmese ports, and 24 to Bombay. The British India Steam Navigation Company runs three fast steamers a week between Moulmein and Rangoon, as well as a boat between Moulmein and the other ports on the Tenasserim coast. The inland waters in the neighbourhood are served by the steamers of the Irrawaddy Flotilla Company. The port is in charge of a Port Officer, belonging to the Royal Indian Marine, and is buoyed and lighted by the Port fund, which had an income and expenditure of 1·56 lakhs and 1·79 lakhs respectively, in 1903-4. The Port and Customs offices are near the main wharf, close to the river's edge. Up to 1874 the town was under the control of a town magistrate, the funds required for administration being provided by a night-watch tax and Government contributions and from a few local sources. In 1874 a municipal committee was formed, and the income and expenditure during the decade ending 1901 averaged Rs. 1,42,800. In 1903-4 the former amounted to 7·2 lakhs (including a loan of 3·96 lakhs). The principal sources of revenue were house and land tax (Rs. 72,600), and water rate (Rs. 90,000). The expenditure in the same year was 6·4 lakhs. The chief heads of outlay were Rs. 42,000 spent on conservancy, Rs. 43,000 on roads, Rs. 44,000 on lighting, and Rs. 59,000 on public works. The water-supply, constructed at a cost of 9½ lakhs, has recently been completed. The water is impounded in a reservoir 4 miles to the south of Moulmein, at the foot of the Taungwaing hills, and is distributed through each division of the town by gravitation. It is hoped that the provision of a supply of good drinking water will put a stop to the cholera epidemics that have visited Moulmein regularly in the past. A sum of nearly 3 lakhs is to be expended on surface drainage, of which the town is badly in need. Since 1898 the town has been lit by oil gas. The gas-works are a municipal concern, the plant being capable of generating 12,500 cubic feet of gas daily. The municipality makes no contribution to education, but maintains a hospital with 100 beds. Other public institutions are the leper asylum (where 29 in-patients and 23 out-patients were treated in 1903), and numerous schools. There is a branch of the Bank of Bengal in Moulmein, and two newspapers are published, one in English and one in Burmese.

Boundaries, configuration, and hill and river systems.

Tavoy District.—District in the Tenasserim Division of Lower Burma, lying between 13° 16′ and 15° 6′ N. and 97° 46′ and 99° 12′ E., with an area of 5,308 square miles. On the north lies Amherst District, on the south Mergui, on the east the Siamese frontier, and on the west the Bay of Bengal. It is a rugged tract, 150 miles long and 50 miles broad at its widest part, composed entirely of hills, save for the well-cultivated basin of the Tavoy river and a small area on the sea-coast. The hill ranges run generally north and south. One divides the Tavoy river from the sea; a second, farther east, forms the watershed between that stream and the Tenasserim river; while a third, beyond the Tenasserim to the east, rises as a barrier between the District and Siam. The highest point in the District is a peak known as Myinmoletkat (6,800 feet) on the borders of Mergui District. It lies in the central range, as also does Nwalabo ('bullock's hump'), a hill nearly 6,000 feet in height. The Tenasserim in the south and the Tavoy river in the north are the two main waterways. The main branch of the Tenasserim river has its source in Myinmoletkat, and flowing first northwards, turns sharply to the east at about the latitude of Tavoy town, and thence runs southwards into Mergui District. It is not navigable in the dry season except by canoes. The Tavoy river, which rises in the extreme north of the District, and flows due south past Tavoy town to the sea, is navigable by steamers of light draught up to Tavoy, and thence for about 40 miles by boats. There are no other waterways of importance. About 10 miles off the coast, in the latitude of Tavoy town, are three groups of islands known as the Moscos, rocky and uninhabited, but of economic value as yielding the edible bird's-nest of commerce.

Geology.

The District has never been carefully examined by a geologist. The mountain ranges appear to be granite, probably of Palaeozoic age. The intervening valleys have occasional patches of clay slate, more or less altered by igneous action. The hills along the coast contain on their east side an abundance of micaceous iron ore and clay ironstone; and nearly opposite Tavoy, on the west bank of the river, is an elevated ironstone ridge. The plains are composed of a stiff clay, sometimes highly ferruginous.

Botany.

The principal timber and other trees are referred to below under the head of Forests. Medicinal plants are said to be very numerous. Besides those dealt with elsewhere, mention may be made of cinnamon, the castor-oil plant, sarsaparilla,

and the sea coco-nut, the last said to be useful as an astringent. There are several vegetable dyes.

The wild animals include elephants, rhinoceros, tigers and leopards (the ordinary, the black, and the clouded), the *tsine* or *hsaing* (*Bos sondaicus*), *sāmbar*, hog deer, barking-deer, the Malay bear, hog, and five or six sorts of monkeys. The tapir, though rarely seen, is known to exist, the serow has been shot close to Tavoy, and the orang-outang is reported to have been found in the hills. The birds include peafowl, the pheasant, and the hornbill. Fish abound in great variety. Crocodiles are numerous in the rivers, and the sea-beach is frequented by turtles. Fauna.

The climate is on the whole pleasant, the intense heat of the hot season being moderated by sea-breezes. During the cold season the thermometer at midday scarcely ever reaches 92° in the shade, and occasionally in the early morning falls as low as 57°. Between December and February dense fogs prevail in the mornings till about 9 o'clock. In April there are occasional squalls of wind and rain, and about the middle of May violent thunderstorms occur and the south-west monsoon sets in. After this electric disturbances are rare till October, when the rainy season ends in much the same way as it began. Maungmagan, a village on the sea-coast, about 9 miles north-west of Tavoy, is frequently visited as a sea-bathing resort during the hot months. It boasts of a fine sandy beach and its surroundings are agreeable. Climate and temperature.

As elsewhere along the coast the rainfall is very heavy. The average fall, which for the three years ending March, 1904, was 228 inches, is somewhat higher in the north than in the south of the District. At Launglon it has been known to reach 252 inches, the highest recorded in the Province. Rainfall.

Tavoy District has at various times formed a portion of the dominions of the kings of Siam, Pegu, and Ava, but its early history is involved in great obscurity. The first settlers were probably Siamese, but at a very early date a colony of Arakanese are said to have established themselves. These latter have left their mark on the language of the District (Tavoyan dialect), which possesses archaic features of its own. The earliest written accounts of the country state that the Burmese king Narapadisithu, who came rather as a preacher of religion than as a conqueror, founded Kyethlut in Kwedaung Bay, not far from the Tavoy river, in A.D. 1200. The same monarch is credited with the building of the pagoda on Tavoy Point. Anxious to connect their religion with the great Asoka, History and archaeology.

Buddhist writers assert that, in 315 B.C., that monarch ordered the construction of a pagoda in what is now Tavoy town. Many years after this the country was subject to Siam, and still later to the sovereigns of Pegu, from whom it passed to Burma; but up to a comparatively recent date it suffered continually from Siamese invasions. About 1752 the ruler of Tavoy became an independent prince, and made overtures to the East India Company; but the terms proposed by the Company were too exorbitant from a pecuniary point of view to find acceptance. Soon afterwards (1757), Tavoy again became a province of Siam; but in 1759 it surrendered to Alaungpayā, the great Burmese conqueror, who a few months later was carried, dying, from Siam to Burma, close to the Tavoy border, to expire within two days' journey of Martaban.

From 1760 until the signing of the Treaty of Yandabo in February, 1826, the country was torn by internal rebellions and attacks from the Siamese. During the first Burmese War, in 1824, an expedition was dispatched against the District, which ended in Tavoy being handed over to Sir Archibald Campbell's troops. In 1829 a revolt broke out, headed by Maung Da, the former governor; but this was speedily suppressed, and since then the District has remained in the undisturbed possession of the British. For some years a body of troops was stationed in Tavoy town; but the District has for many years now been guarded solely by police, who were able, with some help from Rangoon, to suppress a rising which took place in April, 1888.

The most famous pagoda is the Shinmokti, a few miles south of Tavoy town, containing an image, near which are a stone and a banyan-tree, all three supposed to have miraculously floated across the ocean from India. The building is 58 feet high, and 300 feet in circumference at the base. On Tavoy Point, on the right bank of the Tavoy river, is the Shinmaw, only 9 feet high, founded in A.D. 1204, and said to contain a tooth of Gautama. North of Tavoy is the Shindatwe, a shrine of very early date, built on the spot upon which a holy relic of Buddha is said to have alighted after a lengthy flight through the air. In addition to these, there are ten pagodas in the town and suburbs of Tavoy, and nineteen others in the District, all of more or less sanctity, and some supposed to be of great antiquity. The ruins of old Tavoy or Myohaung stand a few miles to the north of the existing town.

The people.

The population rose from 71,827 in 1872 to 84,988 in 1881, 94,921 in 1891, and 109,979 in 1901. The principal

statistics of area and population for 1901 are given below, by townships:—

Township.	Area in square miles.	Number of		Population.	Population per square mile.	Percentage of variation in population between 1891 and 1901.	Number of persons able to read and write.
		Towns.	Villages.				
Yebyu . . .	1,842	...	55	12,550	7	+ 11	1,130
Tavoy . . .	2,340	1	64	33,818	14	+ 31	8,469
Zaunglon . .	335	...	112	33,187	99	+ 22	5,249
Thayetchaung .	791	...	91	30,424	38	− 1	4,667
District total	5,308	1	322	109,979	21	+ 16	19,515

During the last decade the population has increased by 16 per cent., a rate somewhat below the Provincial average. The District is not one which attracts any considerable amount of immigration, either Burman or foreign, and the greater part of the increase may be looked upon as attributable to natural factors. TAVOY TOWN, the head-quarters, has a population of 22,371, and stands eighth among the towns of the Province in point of numbers; but the District has no other collection of houses containing a population of over 2,000. As regards density, Tavoy is, after Northern Arakan, Mergui, and Salween, the most thinly populated District of Lower Burma. Nearly the whole population is gathered in the basin of the Tavoy river, which is divided among the four townships, most of it being apportioned between Thayetchaung and Launglon. In all, 96 per cent. of the people are Buddhists and 2 per cent. Christians. The rest are Animists, Musalmāns, and Hindus. About 95 per cent. of the people talk Burmese (the majority using what is known as the Tavoyan dialect, akin to Arakanese), and Karen is spoken widely in the hills.

Race and occupation.

About 89 per cent. of the people returned themselves in 1901 as Burmans, and 8 per cent. as Karens, the latter occupying the hills in the east and south. More than 1,100 persons were enumerated as Talaings; the remainder were mostly Zairbādis or Chinese. Only 200 of the inhabitants were shown as Siamese, though no doubt much of the population was formerly of that race. The population directly dependent upon agriculture in 1901 was 64,600, or 59 per cent. of the total, as compared with the Provincial percentage of 67. Of these, 26,801 were dependent upon *taungya* (shifting) cultivation alone.

Christian missions.

The American Baptist Union has missions for Karens and Burmans. The Tavoy mission was started in 1828, and has 23 churches and 21 schools. The number of native Christians in 1901 was 1,612.

General agricultural conditions.

The District is generally hilly outside the valley of the Tavoy river, and nearly half the cultivators practise *taungya*-cutting, burning the forest and passing on after a crop or two has been taken from the land. In the lowlands the early rice (*kaukkyi*) obtains ample water from the heavy rainfall, and is cultivated as elsewhere in the 'wet' areas of the Province. *Mayin*, or hot-season rice, is grown to a small extent.

Chief agricultural statistics and principal crops.

The following table gives the main agricultural statistics of the District for 1903-4, in square miles:—

Township.	Total area.	Cultivated.	Irrigated.	Forests.
Yebyu . . .	1,842	22	0.6	4,960
Tavoy . . .	2,340	27	...	
Launglon . . .	335	70	0.4	
Thayetchaung . .	791	59	...	
Total	5,308	178	1	4,960

Rice is the principal crop, occupying 135 square miles, or three-fourths of the whole area cultivated, in 1903-4. About 44 square miles are planted with fruit or palm-trees, of which the areca and the *dani* palm are the most important, the latter occupying 7,000 acres. On the small remaining area cotton, *san*-hemp, cardamoms, tobacco, and coffee are grown. The average extent of a rice holding in the surveyed area is about 7 acres in the case of *kaing* land, and about half an acre in the case of *mayin*. Garden-land holdings range somewhat higher.

Improvements in agricultural practice.

The cultivated area has increased steadily since 1880-1, when it was only 117 square miles. Comparatively little use has been made of the Land Improvement and Agriculturists' Loans Acts since 1899, when over Rs. 2,000 was advanced to villagers in the Yebyu township on account of failure of crops.

Irrigation and fisheries.

There are no tanks of importance, nor are there any inland fisheries in the District. Sea-fishing is, however, carried on freely all down the coast, and the fishery revenue yielded Rs. 16,500 in 1903-4. Only about one square mile is irrigated.

Cattle, &c.

Cows and buffaloes of a fairly good quality are largely bred, and goats to a small extent. A few ponies are imported

from Siam via Myitta. There are about 90 grazing reserves within the limits of the District, comprising 31 square miles.

The chief timber trees of Tavoy are *thingan* (*Hopea odorata*), which grows sometimes to the height of 250 feet and is largely used for boat-building; *pyingado* (*Xylia dolabriformis*), exported to Calcutta for sleepers; *padauk* (*Pterocarpus indicus*) and *kokko* (*Albizzia Lebbek*), ornamental woods in demand in England and America; *pyinma* (*Lagerstroemia Flos Reginae*) and *anan* (*Fagraea fragrans*). Gamboge and camphor trees are found, and the cashew-apple is plentiful. Timber extracted for trade purposes is dragged by elephants to the Tavoy river and thence floated to Tavoy. There are forest revenue stations at Yebyu, Tavoy, and Sinbyubyin, all on the banks of that stream. The 'reserved' area is 960 square miles, and the area of unclassed forests about 4,000 square miles. The revenue of the South Tenasserim Forest division, which includes also Mergui District, was Rs. 53,000 in 1903–4, and the expenditure was a lakh. Forests.

Tin is worked to a small extent, about a ton (valued at Rs. 1,700) being exported yearly. The coolies employed in the tin-mining industry are all Burmans, natives of the tin-bearing localities. Salt is manufactured from sea-brine, the annual out-turn being between 240 and 280 cwt. A European syndicate is prospecting for gold. Mines and minerals.

The town of Tavoy is noted for its silk-weaving, and its *longyis* (waistcloths) are well known throughout Burma for their strength and permanency of colour. The raw silk used by the local weavers is obtained from Rangoon. One viss (about $3\frac{1}{2}$ lb.), costing Rs. 24, with Rs. 3–12–0 as wages for spinning, Rs. 4–4–0 for dyeing, and Rs. 5 for weaving, will make four *longyis*, sold at Rs. 10 each. The number of weavers returned at the last Census was 1,282. There are five rice and timber mills, all in Tavoy town. Pottery is manufactured in a quarter of Tavoy called Olokpyin, and a little metal-work is done in the town. Arts and manufactures.

The trade of the District passes almost entirely through Tavoy town and Sinbyubyin, rice, salt, and timber being the staples of export. The only land trade route of importance is that which leads from Tavoy eastwards through Myitta, near the Siamese frontier, into Siam. The total value of the exports by this route in 1903–4 was Rs. 2,800, that of imports Rs. 2,400. The principal items of export are manufactured piece-goods, and of import precious stones; but the total trade is insignificant. It is registered at Myitta. Commerce and trade.

Communications.

There are 195 miles of metalled roads, of which 187 are maintained from Provincial funds, and 8 from the District cess fund. The latter also maintains 74 miles of unmetalled tracks. The most important highway is that leading from Tavoy town to the Siamese frontier via Myitta, 107 miles. Others are the roads from Tavoy to Sinbyubyin, from Tavoy to Yebyu, and from Kamyawkin to Maungmagan. The Tavoy river is navigable as far as Tavoy by ships drawing 8 feet. The weekly mail steamer of the British India Steam Navigation Company, running between Rangoon and Mergui, calls at Sinbyubyin near the mouth of the river, and a launch conveys passengers and cargo to Tavoy, 26 miles farther upstream. A fortnightly steamer of the same company connects the port with Moulmein, and a coasting steamer plying between Rangoon and Penang calls once in eighteen days each way. There are five licensed ferries.

District townships and staff.

The District is in charge of a Deputy-Commissioner, who is also District Magistrate and District Judge, as well as *ex officio* Collector of Customs and Port Officer. It is divided into four townships, YEBYU, TAVOY, LAUNGLON, and THAYETCHAUNG, which are in charge of township officers or *myo-oks*, but differs from most Burma Districts in having no subdivisions. Under the *myo-oks* are the rural officials. The number of village headmen is about 200. Tavoy forms, with Amherst and Mergui, a Public Works division, and, with Mergui, a Forest division, the head-quarters of the latter being at Tavoy.

Civil justice and crime.

For judicial purposes the District forms part of the Tenasserim civil and sessions division. Except in the case of the Tavoy township court (which is presided over by a township judge, who sits fifteen days in the month at Tavoy and fifteen at Mergui), all the judicial work of the District is done by the executive officers, assisted at Tavoy by a bench of honorary magistrates. The Tavoy township judge is invested with Small Cause Court powers, with respect to suits of the value of Rs. 50 or less, arising in Tavoy town. The crime of the District presents no special features.

Revenue administration.

The District was settled in 1904–5. The following rates were fixed for a term of fifteen years from July, 1906: on ordinary rice land, Rs. 2 to Rs. 4–8 per acre; on *mayin* rice land, R. 1 to Rs. 2; on garden land, R. 1 to Rs. 5; on miscellaneous cultivation, Rs. 1–8; on *dani* palms, Rs. 3 to Rs. 4; and 2 annas on each solitary fruit tree. The rates on ordinary rice land have been fixed for a term of only five years; at the expiration of that period the maximum rate is to be reduced

to 14 annas an acre, while the maximum rate is to be raised to Rs. 6. The land revenue has been rising steadily during the past two decades. The following table shows its growth as well as the growth of the total revenue since 1880–1, in thousands of rupees:—

	1880–1.	1890–1.	1900–1.	1903–4.
Land revenue . .	1,08	1,30	2,04	2,16
Total revenue . .	2,21	2,53	3,91	4,41

The District cess fund had an income of Rs. 24,800 in 1903–4, chiefly derived from the cess on land revenue; and the main item of expenditure was Rs. 5,000 devoted to education. TAVOY is the only municipality. Local and municipal government.

On Reef Island at the mouth of the Tavoy river stands a lighthouse, which consists of a masonry tower 25 feet high, painted white and surmounted by a fixed dioptric white light, visible in clear weather at a distance of 12 miles. The lighthouse was completed in 1883. Lighthouse.

The District Superintendent is the only superior police officer. There are 6 police stations and 6 outposts; and the force consists of 2 inspectors, 5 head constables, 15 sergeants, and 192 constables. The number of military police is 96, of whom 64 are stationed at Tavoy town, and the rest at Yebyu and Myitta. The District jail at Tavoy has accommodation for 132 male and 6 female prisoners. The industries carried on in it are carpentry, bamboo and cane-work, mat and coir-rope making, tailoring, polishing, and a little blacksmith's work. The out-turn is sold to the public. Police and jails.

The proportion of persons able to read and write in 1901 was 17·7 per cent. (31·2 males and 4·4 females). The standard of education is thus comparatively low for Burma. The number of pupils in the District schools was 2,498 in 1880–1; 3,772 in 1890–1; 5,149 in 1900–1; and 6,748 in 1903–4, including 1,325 girls. There were 6 secondary, 63 primary, and 169 elementary (private) schools in the last year. The total cost of education in 1903–4 was Rs. 16,900, towards which the Tavoy municipality contributed Rs. 3,000, the District cess fund Rs. 5,000, and Provincial funds Rs. 4,200. The American Baptist Mission has an Anglo-vernacular school for Karen boys and girls. Education.

The only hospital is at Tavoy town, in which 20,661 cases were treated in 1903, including 496 in-patients, and 487 operations were performed. It has thirty-five beds, and its Hospitals.

income is derived almost entirely from municipal funds, which contributed Rs. 4,500 in 1903.

Vaccination. Vaccination is compulsory only within the limits of the Tavoy municipality. In 1903-4 the number of persons successfully vaccinated was 13,754, representing 125 per 1,000 of population.

Yebyu.—Northernmost township of Tavoy District, Lower Burma, lying between 14° 7′ and 15° 6′ N. and 97° 46′ and 98° 35′ E., with an area of 1,842 square miles. It forms an irregular triangle, with its eastern and western sides bounded respectively by Siam and the Bay of Bengal, and its base in the south marching with the borders of the Tavoy and Launglon townships. Except along the valley of the Tavoy river, it is a mass of hills. The head-quarters are at Yebyu, an inland village of 269 inhabitants, at its southern end, on the banks of the Tavoy river. The population in 1891 was 11,270 and in 1901, when it was known as the Northern township, 12,550. The density of population is only 7 persons per square mile. It contained in 1901 a total of 55 villages. The area cultivated in 1903-4 was 22 square miles, paying Rs. 17,000 land revenue.

Tavoy Township.—Township of Tavoy District, Lower Burma, lying between 13° 18′ and 14° 18′ N. and 98° 11′ and 99° 12′ E., with an area of 2,340 square miles. The population was 25,760 in 1891, and 33,818 in 1901. In the latter year it contained one town, TAVOY (population, 22,371), the head-quarters of the township and District, and 64 villages. It was then known as the Central township. The only place of importance besides Tavoy is Myitta (population, 533), in the north-east, near the Siamese border, where there is a station for registering the trade between Burma and Siam. Except for a strip of plain land in the west in the valley of the Tavoy river, the township is a mass of forest-clad hills. Between a third and a fourth of the inhabitants outside the limits of Tavoy municipality are Karens, who inhabit the hill areas in the east. The area cultivated in 1903-4 was 27 square miles, paying Rs. 33,000 land revenue.

Launglon.—Western township of Tavoy District, Lower Burma, lying between 13° 31′ and 14° 13′ N. and 98° 5′ and 98° 14′ E., with an area of 335 square miles. It consists of a narrow strip of country, covered with low hills running north and south between the sea and the lower reaches of the Tavoy river. The population was 27,209 in 1891, and 33,187 in 1901, distributed over 112 villages. The density

in the latter year was 99 persons per square mile. The population is almost wholly Burman. The head-quarters are at Launglon, a village of 1,461 inhabitants, situated about 8 miles south-west of Tavoy. Maungmagan, a village on the coast north-west of Tavoy, is resorted to for sea-bathing by the residents. It has a fine sandy beach and picturesque surroundings. The area cultivated in 1903-4 was 70 square miles, paying Rs. 88,000 land revenue.

Thayetchaung.—Coast township in the south of Tavoy District, Lower Burma, lying between 13° 16′ and 14° 2′ N. and 98° 13′ and 98° 44′ E., with an area of 791 square miles. The population was 30,673 in 1891, and 30,424 in 1901. In the latter year it was known as the South-eastern township, and contained 91 villages, one of the largest of which was Thayetchaung (population, 1,108), the head-quarters, which lies close to the left bank of the Tavoy river, about 15 miles nearer the sea than Tavoy town. Except near the sea, the township is very hilly. The population is for the most part Burman, but there is a fair proportion of Karens. The area cultivated in 1903-4 was 59 square miles, paying Rs. 78,000 land revenue.

Tavoy Town.—Head-quarters of the District of the same name in Lower Burma, situated in 14° 5′ N. and 98° 12′ E., on the left bank of the Tavoy river, 30 miles north of its mouth and 7 from the sea-coast on the west, from which both town and river are separated by a low range of hills. The town is low-lying, and all except the central portion is liable to be flooded at high tides. On the west it is flanked by the river, and towards the south-west rice and timber mills extend from the centre of the town along the bank for a distance of about 2 miles. To the north and south stretches the valley of the Tavoy river; to the east a narrow strip of plain land separates the urban area from the outlying spurs of the hill system, of which the Nwalabo peak is a prominent feature. Tavoy is well laid out, with three main thoroughfares parallel to the river. All the Government buildings are in the centre, except the jail and military police barracks, which are situated on higher ground to the east. The town is well wooded throughout and abounds in gardens. The houses of the people are mostly of timber, with roofs of *dani*, the leaf of the *Nipa* palm. The large open square which formerly existed in the centre of the town has been built over, and there are no traces of the old fort.

The present town of Tavoy was founded in 1751, but it

is probable that the province had earlier capitals. The remains of what must have been important cities have been found in various parts of the District, and the ruined site of Myohaung or old Tavoy has been traced a few miles to the north of the existing town. Comparatively early in the first Burmese War a force was dispatched to seize the southern portion of Tenasserim, and in 1824 Tavoy was occupied without resistance, and has never since passed out of the possession of the British. The town attained its existing dimensions in 1896, when the Letwegyun and Kyaukmaw circles of the Tavoy township were transferred to the Tavoy municipality. Its present area is about 8 square miles.

The population of Tavoy town in 1872 was 14,469. In 1881 it had fallen to 13,372, in 1891 it was 15,099, and by 1901 it had risen to 22,371 persons. The increase during the past decade (numerically greater than that of any other town in the Province except Rangoon) is somewhat remarkable, in view of the fact that there has been nothing in the shape of railway enterprise to promote trade and attract the rural population into municipal limits. Between 1872 and 1881 there was a decrease in population of over a thousand, but since 1881 the prosperity of the town has, if growth of population is any real guide, been steadily on the increase. The 22,371 persons enumerated in 1901 consisted of 231 Christians, 375 Hindus, 881 Musalmāns, 110 Animists, and 20,774 Buddhists. There has been an increase under each religion since 1891, fairly evenly divided. In the steady growth of its Buddhist population Tavoy differs from all the larger towns of Burma.

The trade of Tavoy, which is not of great importance, is carried on chiefly with the ports of Rangoon, Mergui, and Calcutta, and with the Straits Settlements. The principal exports in 1903–4 were rice, valued at 8 lakhs, sent for the most part to the Straits, and silk waistcloths, valued at 3 lakhs, to Rangoon. Other goods were salt (Rs. 62,000), timber (Rs. 58,000), and *dani* leaves for thatch (Rs. 39,000). The principal imports, mainly from Rangoon, were raw silk, valued at $2\frac{1}{2}$ lakhs; tobacco and piece-goods, each a lakh and a half; and sugar, kerosene oil, twist and yarn, and *til* seed, each about a lakh in value. It is interesting to note that the trade of the port, though not large, is growing. The total value of imports and exports of foreign and coasting trade, which in 1890–1 was $15\frac{3}{4}$ lakhs, had risen in 1900–1 to $20\frac{1}{2}$ lakhs, and in 1903–4 to 36 lakhs.

Silk-weaving is the main industry of the town, and there were 995 looms in Tavoy in 1903. The manufacture of pottery, cotton-weaving, and gold and silver work are also carried on. The five rice and timber mills employed 140 male adults and 30 female adults in 1904. The out-turn from the rice-mills is exported mainly to the Straits, whereas timber is sent to Rangoon and Calcutta. Tavoy has a municipality, which was constituted in 1887. The receipts and expenditure of the municipal fund during the ten years ending 1901 averaged Rs. 30,000. The income in 1903–4 was Rs. 39,000, of which one-third was derived from the house tax and one-third from market dues. The chief items of expenditure were conservancy (Rs. 13,000), hospital (Rs. 5,600), and education (Rs. 3,000); total, Rs. 33,600. The port limits, which were defined in 1875, extend to Tavoy Point at the mouth of the river. The income of the Port fund amounted in 1903–4 to Rs. 3,700.

Mergui District.—Southernmost District of Burma and of the Tenasserim Division, extending on the mainland from *Myinmoletkat* mountain (13° 28′ N.) on the border of Tavoy District in the north to the mouth of the Pakchan river (9° 58′ N.) and the Isthmus of Kra in the south, and including the islands of the Mergui Archipelago from Tavoy Island to the Aladdin Isles in 9° 38′ N. On the east it is conterminous with Siam, and at one point, in 99° 40′ E., the Gulf of Siam is only 10 miles away. On the west the islands stretch out as far as 97° 30′ E. The total area is 9,798 square miles. **Boundaries, configuration, and hill and river systems.**

North of Mergui town the valley of the Great Tenasserim river is separated from the sea by a mountain range, culminating in Myinmoletkat, 6,800 feet high, on the northern border. Between this range and the coast is a fertile plain, intersected by small streams running east and west, and to a great extent cultivated. The rest of the District is of a very different character. There are no mountain ranges of any importance, and such level lands as exist are mostly covered by the sea at high tide or, if inland, flooded during the rains. With the exception of the valleys of the Tenasserim and the Upper Pakchan, this part of the District is generally a network of low hills fringed with mangrove swamps.

The principal rivers are the Great Tenasserim, rising far to the north, in Tavoy, and entering the District about 140 miles above Tenasserim village, where it doubles back on itself and flows into the sea, forming a delta round Mergui town; its tributary, the Little Tenasserim, which joins it at Tenasserim

village after a northerly course from the Siam border; the Lenya, to the south-west of the Little Tenasserim, and nearly parallel with it, but flowing direct into the sea south of Mergui after a bend to the north-west; and the Pakchan, rising in the same neighbourhood as the Lenya, but flowing south to Victoria Point. The District is thus, with the exception of the Palaw township, where a few streams run from east to west, a system of rivers flowing from north to south or south to north, except where a bend is needed to enable them to reach the sea. The MERGUI ARCHIPELAGO, which stretches down the entire length of the coast, numbers 804 islands of every size, from King Island, with an area of 170 square miles, to mere rocks rising abruptly from the sea. Nearly all are forest-clad, and most are hilly, often fringed with mangrove swamps, but occasionally displaying a yellow beach of sand or pebble. With the exception of King Island, which is partly cultivated by Burmans and Karens, and some fishing villages, more or less deserted during the monsoon, on the shores of Kisseraing and Sellore, the islands are almost uninhabited, but for the Salons or sea-gipsies who wander among them. A remarkable feature of the coast scenery is the presence of limestone cliffs, towering sheer out of the water for several hundred feet, and forming caves which recall the interior of a Gothic cathedral, while others enclose lakes accessible only at low tide through a tunnel in the rock. They are the home of the tiny swift that builds the edible nest of commerce.

Geology. Coal, tin, gold, and other minerals are found in the District. They are referred to in detail in a later paragraph. The coals of Theindaw and Kawmapyin on the Great Tenasserim are found in association with shales, sandstones, and conglomerates, which form a Tertiary basin. The Moulmein group of beds constitute the greater portion of the sedimentary rocks. Under these is the Mergui group, a series of essentially pseudomorphic sedimentary beds, with imbedded fragments of felspar which have so far been noticed only near Mergui. Rocks of the gneissic series with granite, &c., also occur. It is from the disintegration of this granitic rock that the tin ores are derived.

Botany. The flora resembles generally that of the adjoining District of Tavoy. There is a good deal of swamp vegetation. Canes are abundant. The *thin* reed grows in the valley of the Little Tenasserim. The principal timber trees are referred to under the head of Forests below.

Fauna. The District swarms with monkeys, especially the fisher-monkey (*Macacus cynomolgus*), which may be seen in great